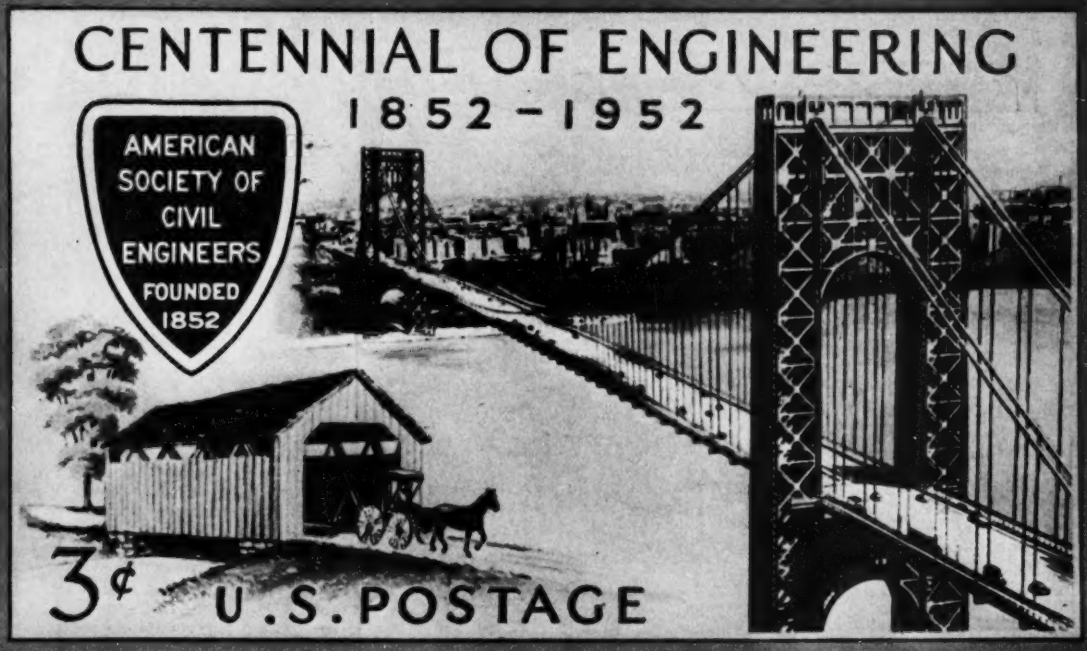
ENGINEERING NEWS-RECORD



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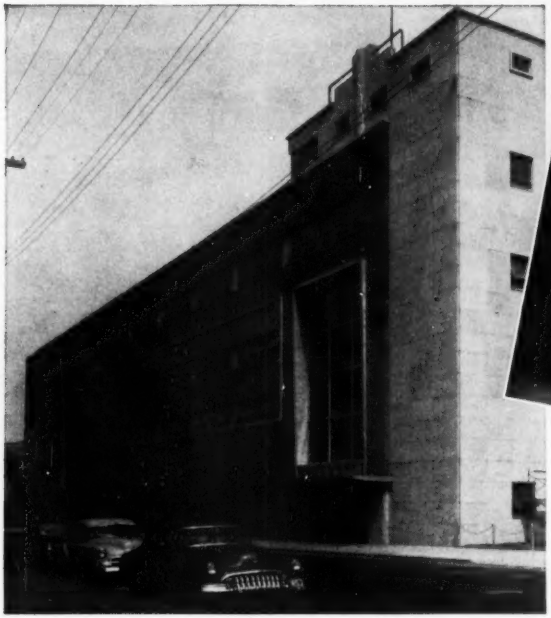

BYERS
Wrought Iron Pipe

combats corrosion in this new PHILCO building

Recognizing the importance of building for *durability,* as a hedge against high maintenance costs, the designers of this new Philco Manufacturing and Storage Building, Philadelphia, Pa., specified genuine wrought iron for plumbing in all soil and waste lines above ground; for heating in all steam condensate return lines. Architect and Engineer for the project—Jack S. Steele Company, Philadelphia, Pa. Fabricator—Philadelphia Piping and Equipment Company, Philadelphia, Pa.

The performance of Byers Wrought Iron pipe, in similar installations all over the country, attests to the soundness of these specifications. Studies of a number of old buildings in various cities have revealed genuine wrought iron pipe still serving in all of these corrosive applications years after ordinary materials in similar services had required repairs and replacements.

Our bulletin, WROUGHT IRON FOR PIPING SYSTEMS, gives a digest of the experience of designers and engineers with genuine wrought iron in building services. We have a copy for you. Write today . . . you'll find the information helpful.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N. Y.

Why
Genuine Wrought Iron Lasts

This notch-fracture test specimen illustrates the unique fibrous structure of genuine wrought iron—which is responsible for the high corrosion resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON
WROUGHT IRON
TUBULAR AND HOT ROLLED PRODUCTS
ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

Another Record Setting Conveyor Belt—*G.T.M. Designed*

FIRST long-center underground conveyor in South Africa, this conveyor belt hauls diamond-bearing clay 1,530 feet below the surface of the ground.

Designed by the G.T.M.—Goodyear Technical Man—this belt has proved *so satisfactory since its installation in 1948 that mine management decided to replace other steel-rope haulage systems with conveyor belts!*

Thanks to the results experienced with the G.T.M.-designed belt, operators of the mine now specify Goodyear belting 100% for all conveyors, above ground and below.

Reasons for this decision are:

Elimination of frequent derailments, high accident rate and constant breakdowns experienced with rope-and-cart haulage

Saving of 800 man-hours per day over previous system

Appreciably reduced cost-per-ton-handled

LOOK FOR YOUR GOODYEAR INDUSTRIAL RUBBER PRODUCTS DISTRIBUTOR *in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods." He handles Hose, Flat Belts, V-Belts, Molded Goods, Packing, Tank Lining, Rubber-Covered Rolls, built to the world's highest standard of quality.*

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ENGINEERING NEWS-RECORD

ABP Member

Volume 149 August 28, 1952 No. 9

WALDO G. BOWMAN
Editor

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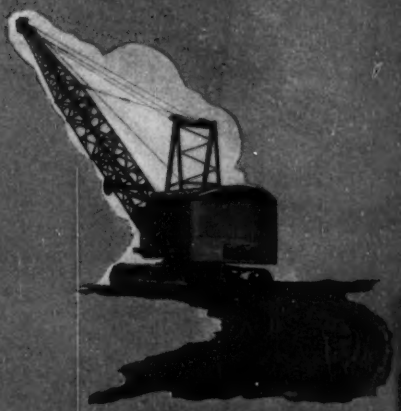
with a Dragline unless you can travel!

There are a lot of people who forget that output depends on a lot of other things besides the digging functions. Take Dragline work. That ditch will go for miles back in the country before it's done and it isn't going to be "dance floor" travel either. These rigs will be in a lot of difficult places before the trailer picks them up for another job. It's those tough places that cost time and money.

When you have Northwest steering on your larger machines there is no worry about the difficult spots. Positive traction on both crawlers while turning as well as when going straight ahead, reduces the need for mats and takes you in and out of the places that give other equipment trouble. Northwest Crawlers with their self-cleaning action have been proved in the miles of travel characteristic of Dragline and Pullshovel work. They require little maintenance — they are trouble-free and they take you *there — and back.*



Look at the tread trail of a Northwest Crawler—no jerking—no digging in—no terrific overload of strain caused by shoving the machine around with one live crawler. Northwest Positive Traction saves money by getting you through the difficult places easier and faster.

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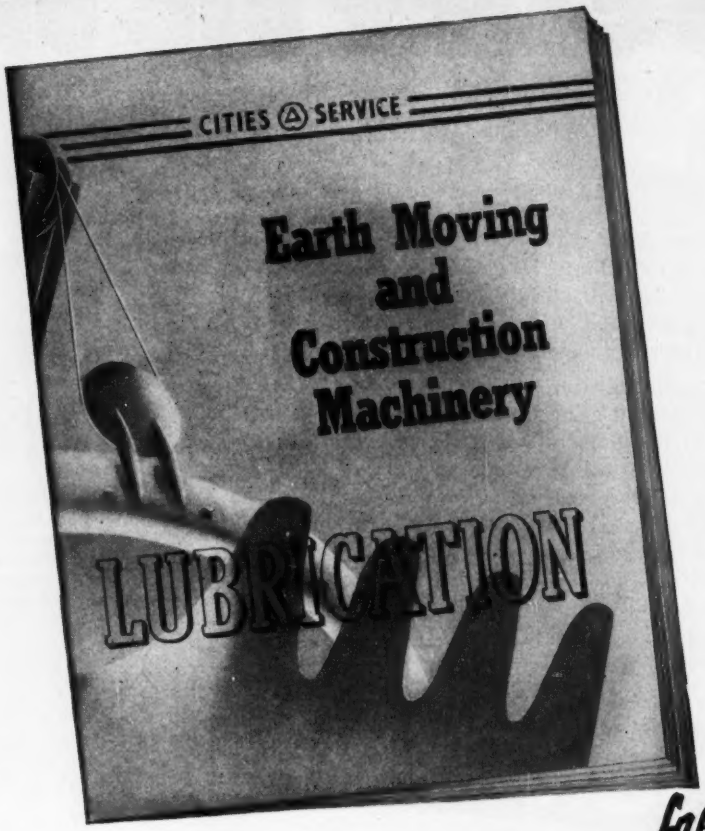
It's Another

NORTHWEST



Have you received your 1952 free edition?

FOR YEARS, men in construction and allied fields have found this lubrication book tremendously helpful. It not only discusses the basic fundamentals of lubrication, but it gets right down to specific lubricating techniques for all your equipment.

Proper use of the practices outlined in this book, plus the full line of Cities Service Quality Lubricants can:

- **Lengthen the life of your equipment.**
- **Increase productivity.**
- **Speed up operation.**
- **Save on operating costs.**

If you're the boss and owner, it protects your investment, increases profits and simplifies your operations. If you're working for the boss, proper use of this book will help you on the job. Write now for your 1952 edition of EARTH MOVING AND CONSTRUCTION MACHINERY LUBRICATION, CITIES SERVICE OIL COMPANY, DEPT. H 14, Sixty Wall Tower, New York City 5

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Murphy Diesel Engines and Power Units for construction, 90 to 226 H.P., 1200 and 1400 RPM. Generator Sets, 60 to 140 K.W.

FOR the most part, engines look pretty much alike from the outside, but to really judge an engine you have to look inside. The Murphy Diesel isn't afraid of comparison. It offers a combination of proved design advantages available in no other engine. Check these features for yourself and ask Murphy Diesel owners—they'll tell you what these features mean in terms of good heavy-duty power, minimum fuel consumption and long engine life.

Additional information is given in the booklet, *"10 Questions to Ask a Diesel Engine Salesman"*. Ask your Murphy Diesel Dealer for a copy or write direct.

MURPHY DIESEL COMPANY

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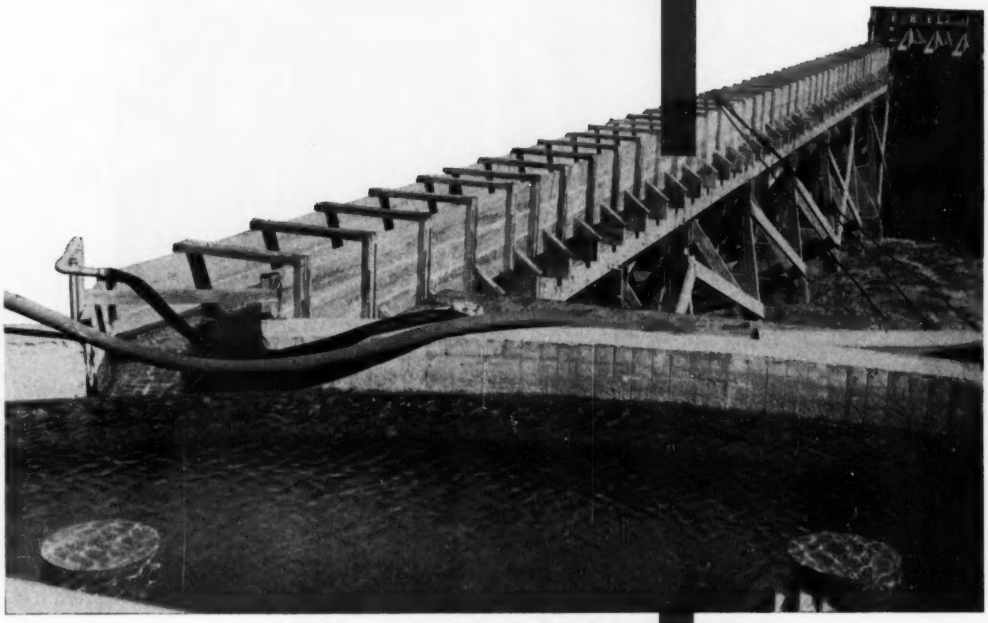
227 ***Sales, parts and service in strategic locations throughout the nation***

Monsanto Penta helps carry the load



Knoxville Power Company has given Monsanto Penta (pentachlorophenol) a tough assignment at its Alcoa, Tennessee, plant. It's the job of protecting a wooden flume that carries 2,000,000 gallons of water a day. The flume usually is in service around the clock.

The previous flume, not penta protected, had to be replaced after nine years because of decay. The company hopes to get 18 to 20 years of service from the penta-protected structure, bringing a substantial saving in maintenance.

Monsanto Penta is a stable chemical, developed for wood preservation. It stops decay. It protects against termites and other wood-boring insects. Monsanto Penta does not leach. Rain and ground water do not wash it away. It can be applied so wood can be painted, waxed or varnished.

For information on the use of penta, for names of suppliers of penta-protected wood or for brands of wood preservatives formulated with Monsanto Penta, contact the nearest Monsanto Sales Office or MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 S. Second St., St. Louis 4, Mo.

☆ ☆ ☆ ☆

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PENTA

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

Babler Bros. & Rogers lick narrow work areas, congested traffic with 2 C Tournarockers

In relocating Harman Creek section of the Columbia River Highway at Cascade Locks, Contractors Babler Bros. & Rogers, Portland, Oregon, faced three major problems:

1) Load and dump areas were narrow and congested;
2) Cycle involved travel through heavy traffic on U.S. 30;
3) 4300′ haul to fill included 1000′ of 5% adverse grade.

To meet these conditions, Babler Bros. & Rogers assigned a large share of their 100,000-yd. job to 2 fast, highly-mobile C Roadster Tournarockers. Here's typical production for their 18-ton rear-dumps:

Move 100 pay yards hourly on 4300′ haul

Loaded in 5 passes from a 2½-yd. shovel, Tournarockers got approximately 10 pay yards of boulders and dirt per load. In spite of stops for auto traffic and delays at the shovel, each rig completed an 8600′ cycle every 11.3 minutes. That's 5 round trips, 50 to 55 pay yards per hour per unit. Combined production for both "C's" averaged 1000 pay yards per 10-hour day. Very satisfied with this output, Contractor Glen O. Stevenson calls Tournarocker the "most versatile machine yet used."

18-ton Tournarocker is loaded with 10 yds. of dirt and boulders in 5 shovel passes.

With 4-wheel air brakes, Tournarocker hauls along narrow roads, through traffic in complete safety.

"Best rig I ever ran," says Operator Walker

Tournarocker's fingertip electric controls and positive power steer made a big hit with operators, too. As Lynn Walker puts it, "I've been operating 14 years, and this is the *best* rig I ever ran. I'm really a dozer man," he adds, "but I'd rather run the Tournarocker."

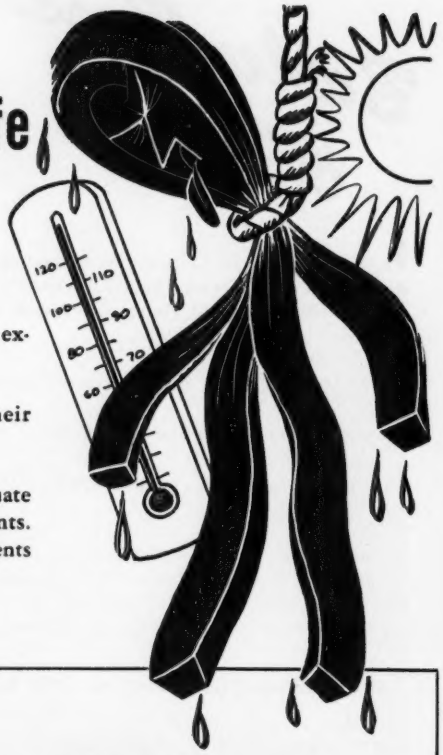
Whenever *you* have dirt to move, it will pay you to compare your output with production figures on speedy LeTourneau rear-dumps, bottom-dumps, scrapers and dozers. Ask your LeTourneau Distributor for owner-verified reports on work like yours.

R. G. LeTOURNEAU, INC.
Peoria, Illinois

Tournarocker—Trademark R-53-M.h

How to get More Life out of V-Belts

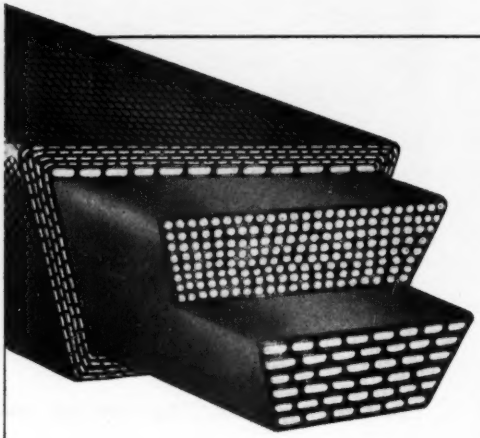
(STORAGE)



DON'T store V-Belts in a hot dry room or expose to the direct rays of the sun.

DON'T hang belts in such a way that their shape will be distorted.

DO specify and store *Bull Dog V-Belts* in adequate supply for your normal replacement requirements. With Bull Dogs on the job "normal" replacements are few and far between.



Your BWH distributor will be glad to show you how Bull Dog V-Belts have the covers, the cords and the compounds to cut *your* belting costs. Call him today.

HERE'S WHY

Their DURABLE COVERS withstand the severe wearing action of the sheave while sealing the belt against grease, dirt, moisture.

There's MINIMUM STRETCH due to a new, exclusive technique which results in fewer takeup adjustments, reduced slippage, longer belt life.

There's a STRONG, SPECIALLY ENGINEERED CORD SECTION with high tensile strength, increased load carrying capacity, ability to absorb shock loads.

The belt TAKES HEAVIEST FLEXING because BWH quality-controlled compounds run cooler and do not crack or deteriorate under severe flexing.

BWH
DEPENDABLE RUGGEDNESS

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Warehouse Stock: 111 N. Canal St., Chicago, Illinois **Distributors in all Principal Cities**

PLANT: CAMBRIDGE, MASS. • P. O. BOX 1071, BOSTON 3, MASS., U. S. A.

completed ...another bridge on RAYMOND piles

Constructed for State of California Department of Public Works, Division of Highways.

spanning the South Channel Sweetwater River between National City and Chula Vista, California is this 332-foot long highway bridge supported by Raymond piles. It has a 28-foot wide roadway and is of reinforced concrete construction with concrete caps resting directly on the Raymond piles—another example of the important role Raymond is playing in the constant development of the highways of America.

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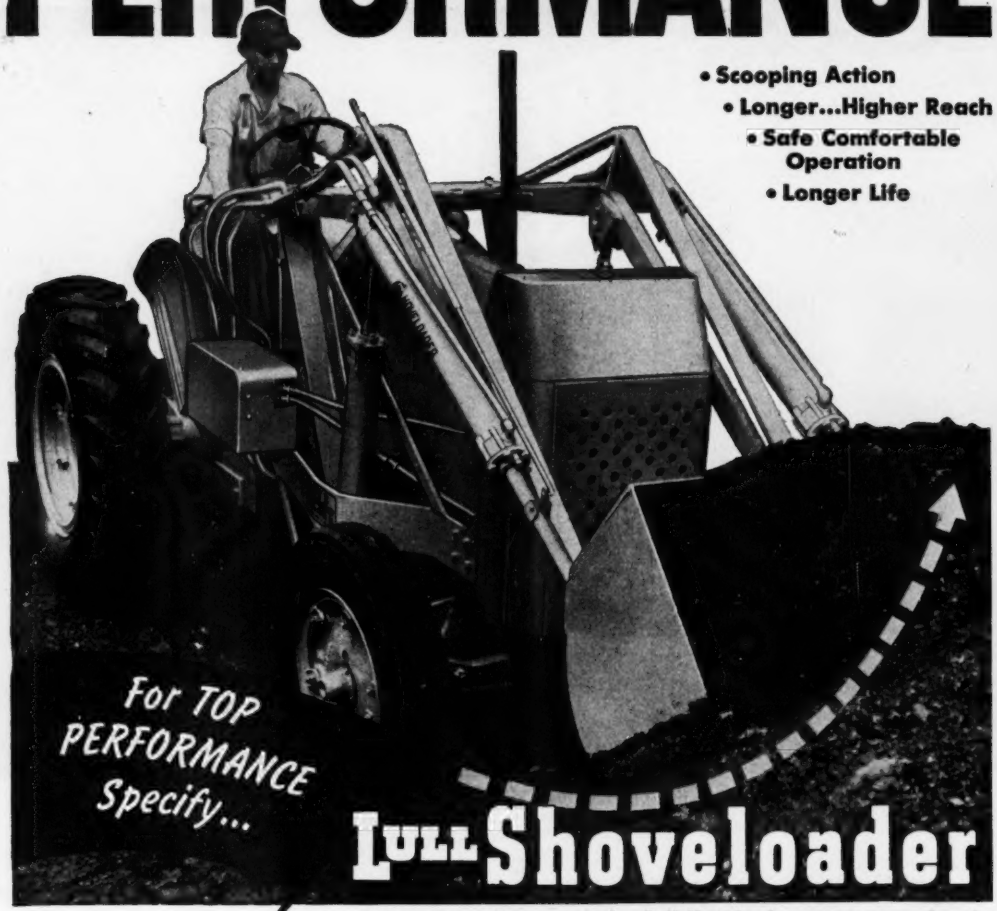

LULL SHOVELOADERS are specially engineered to mount on and utilize the full power of industrial wheel-type tractors.

Outstanding performance makes Lull Shoveloaders top money-makers in the construction business. Field competition has proved time and again that Shoveloaders can move more material . . . faster and at lower cost than any comparable machine.

A clue to Shoveloaders' performance is the faster and smoother loading cycle. (1) Shoveloaders' powerful crowding action scoops up heaping buckets at every pass. (2) Shoveloaders' full hydraulic control gives the operator finger-tip command of hoisting, tilting and dumping. (3) Shoveloaders' higher lift and longer reach load trucks and bins from one position—cuts backing, turning, and blocking of traffic.

Learn how you can profit by Shoveloader performance. See your Lull Distributor, TODAY . . . or Write to:

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Hydrocrane
Hydrohoe

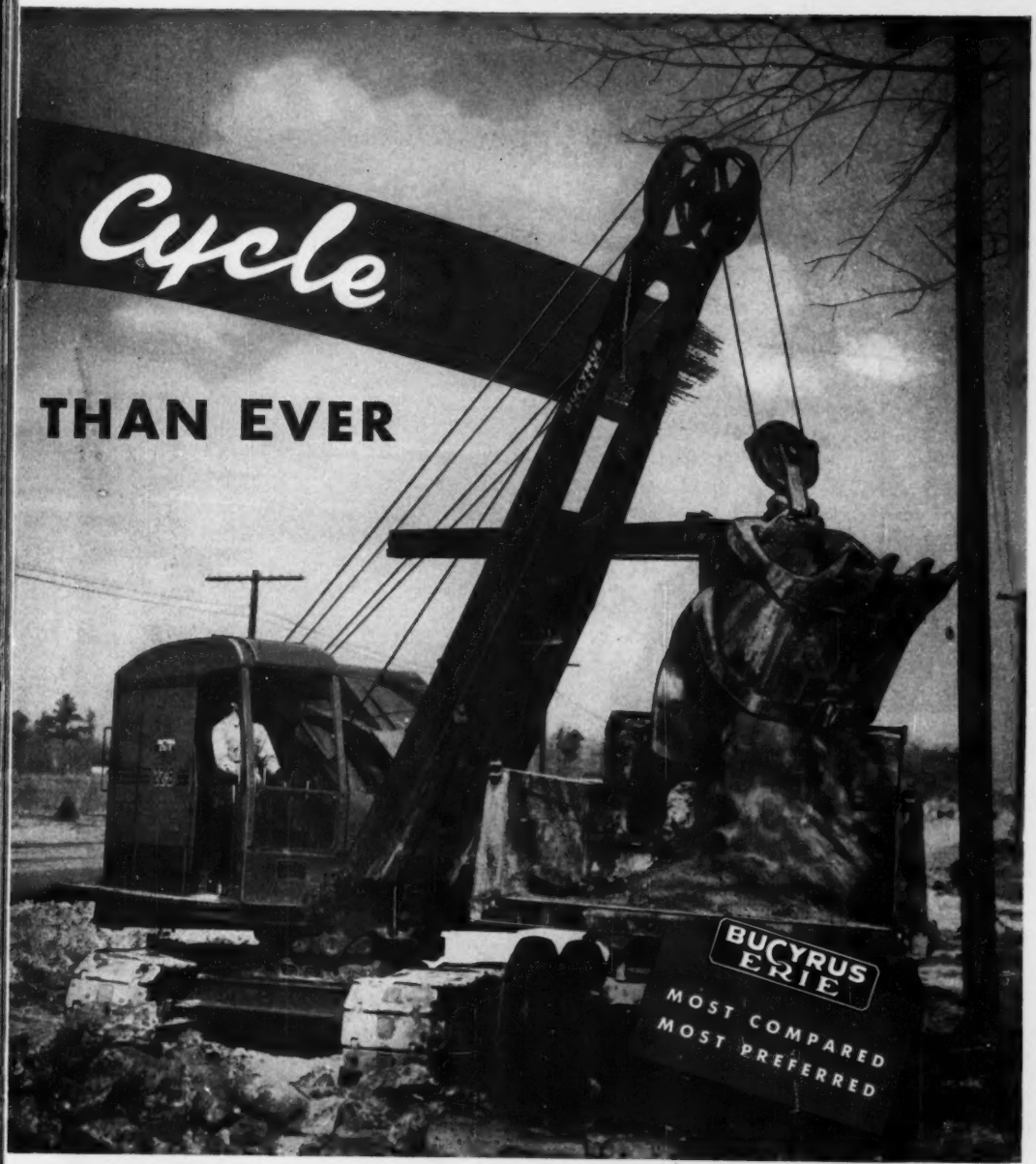
SPEED is a traditional characteristic of Bucyrus-Erie excavators . . . and speed in the individual dig, swing and dump operations only tells part of the story.

In Bucyrus-Erie machines, working speed starts on the drawing board, where cycle functions are **balanced** with one another (as well as being designed fast in themselves) . . . and co-ordinated with proper weight distribution. Adding smooth, steady power . . . liberally used anti-friction bearings . . . easy-filling dippers . . . and direct-action mechanical control gives them the overall production speed that has made them the standard of the industry.

Eliminating lost time and waste motion is one big way to boost output wherever excavators are used. Now . . . when that counts more than ever, you can count on Bucyrus-Erie excavators to "deliver the goods." 60E52C

BUCYRUS-ERIE COMPANY, South Milwaukee, Wisconsin

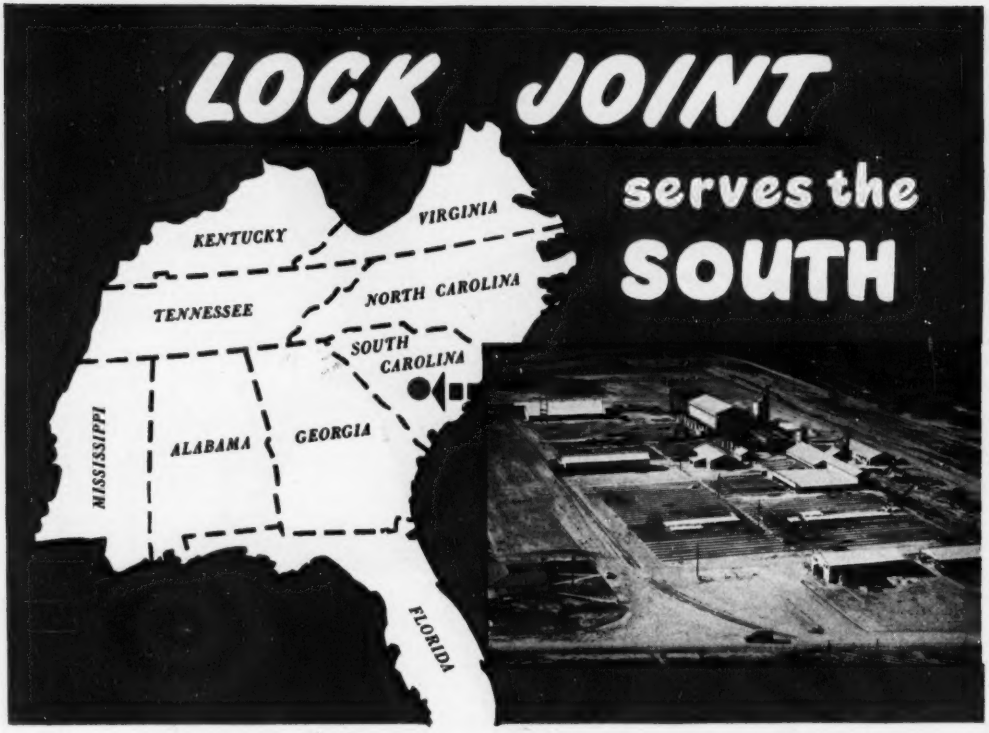
Preventive Maintenance is just one of many important topics covered in a new 32-page booklet — "Ways to Make Your Excavator Work Harder — Last Longer." It's also loaded with valuable hints on application, advantages, proper care, safety and many other phases of excavator care. Write for your copy. Dept. [illegible]



See Your Bucyrus-Erie Distributor

SHOVELS • DRAGSHOVELS • DRAGLINES • CLAMSHELLS • CRANES

LOCK JOINT serves the SOUTH



IF YOU'RE FROM THE SOUTH . . .
specifically Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Kentucky or Tennessee . . . our plant at Columbia, South Carolina, is ready and waiting to serve you. This Columbia plant, the fourth of our up-to-date permanent pressure pipe manufacturing yards, is equipped to produce Lock Joint Prestressed Concrete Cylinder Pipe in diameters from 16" to 48", designed for any pressure common to water works practice. The plant's central location in the Southeast makes it possible to deliver the completed pipe speedily and economically throughout this area.

IF YOU'RE FROM ANY OTHER PART OF THE COUNTRY EAST OF THE ROCKIES . . . our three other permanent pressure pipe plants located at Wharton, N. J.; Detroit, Mich.; and Turner, Kansas, stand ready to provide for your complete Reinforced Concrete Pressure Pipe requirements. All these plants are equipped to manufacture the most carefully designed modern Concrete Pressure Pipe in a large range of standard diameters, and have facilities to handle any contract however large or small.

SCOPE OF SERVICES—*Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16" in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.*

LOCK JOINT PIPE COMPANY
Established 1905
P. O. Box 269, East Orange, N. J.
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LOCK JOINT Reinforced Concrete PRESSURE PIPE

First truck out of the pit - first back for more!

HERE'S why this new GMC W450-30 harnesses more power to 28,000 GVW loads—*hauls more loads per day*—requires less gearshifting, less "horsing" than any other medium six-wheeler:

First, its engine is the *most powerful per pound in truck history*—GMC's sensational new "302" valve-in-head power plant that delivers full 145 HP under the *highest compression* ever built into a truck engine!

Next, this power is applied *equally*—without waste—to ALL four wheels of its DUAL-drive rear axles. This is because a *third,* inter-axle differential will not allow either axle to "wind up"—to spend its power needlessly "fighting" tire differences or road irregularities.

In addition, there are provisions for an optional, inter-axle lock-out to permit *full,* unrestricted traction to reach *both* driving axles whenever extra-rough going demands it.

So there you have it: record-breaking power and compression teamed with outstanding operating economy—yours at a low list price that all but shouts "Come and get it!"

Why not check in at your nearest GMC dealer's and see the truck that makes other six-wheelers seem slow and sluggish by comparison?

GMC Truck & Coach Division of General Motors

Get a real truck!

GASOLINE ½ TO 30 TONS
DIESEL 2½ TO 35 TONS

GMC's NEW 28,000 GVW MODEL W450-30 SIX-WHEELER, gasoline-powered by sensational new 145 HP "302" engine, standard-equipped with dual-drive rear axles—lock-out for inter-axle differential optional at extra cost.

Its scientifically designed, raised-lug pattern provides positive traction from every direction.
Can be sheared, welded, punched, flame cut, shaped!
It won't absorb liquids—there are no pores or cracks! Easy to sweep, too.
Wherever safe footing is important, American industry specifies
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Its pattern is easy to match from any direction.
It's strong and will carry heavy loads.
Made of steel, it will stand up for years under tough abuse!

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- for maintenance and repair
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STOCKED BY LEADING STEEL WAREHOUSES

OUTLOOK BRIGHT FOR HOUSING

Home builders and real estate brokers can look forward to a good housing market for the next 16 months. Plenty of prospective purchasers will be seeking houses in that period. The Federal Reserve Board last week released a statistical study that supports this promising outlook.

In their annual survey of consumer finances, board researchers estimated that 2.1 million families had definite intentions of buying houses during 1952. Of this total, 1.3 million wanted to purchase new houses. The average planned purchase price turned up by the survey was $10,000, giving a total estimated expenditure by the entire group of $21 million.

For 1953, an even larger proportion of family units planned to buy homes. Translated into numbers, this segment amounts to 3.8 million potential buyers who early this year had plans for making house purchases in 1953.

Longer-range buyers' plans for 1953 are necessarily less dependable than the answers they gave interviewers on their intentions for 1952. But even with that qualification, the 1953 demand for houses can be forecast as substantial—apparently as good as this year, if not better.

• **Probably accurate**—FRB researchers qualify their estimates in several respects. But results for recent years bear out the value of the annual projections.

For the last four years, well over half of the families with definite plans to buy wanted new houses. In the end, many of these buyers apparently had to be satisfied with purchases of existing houses. But there is no sign of a change in the dominant trend to seek new houses.

The board's research staff has sound reason to qualify its projections. Size of the sample surveyed is too small to permit any firm forecasting, particularly with respect to future house purchases. For the 1952 survey of consumer finances, interviewers talked to 2,313 nonfarm families. Of this number, 119 planned to buy houses this year. The 1952 estimates are based on this sample.

• **Expenditures up**—Prospective buyers for 1952 expected to pay more than their counterparts a year earlier. The $10,000-average expenditure contemplated for 1952 was $700 higher than the year before, and the median expected outlay also went up $800 to $9,800. In other words, half the buyers expected to spend $9,800 or less, and the rest planned to pay something more than this median amount.

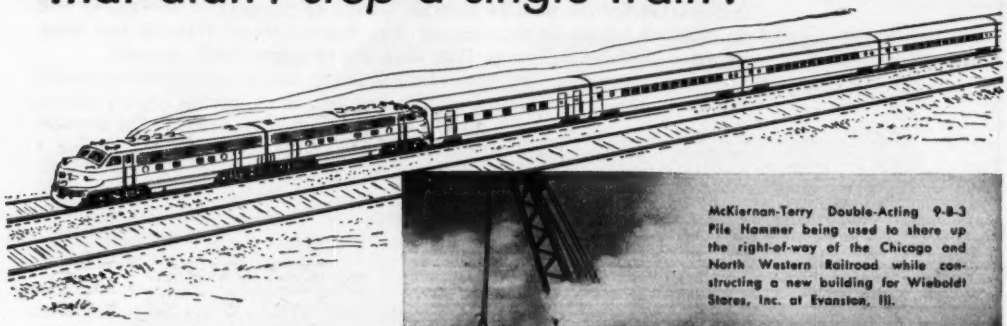
Some 60% of the prospective buyers were families with children, headed by adults 18 to 44 years old. Families with incomes above $4,000 accounted for 70% of the prospects for house purchases during the year. The higher-income families made up a larger proportion of prospective buyers than in previous years.

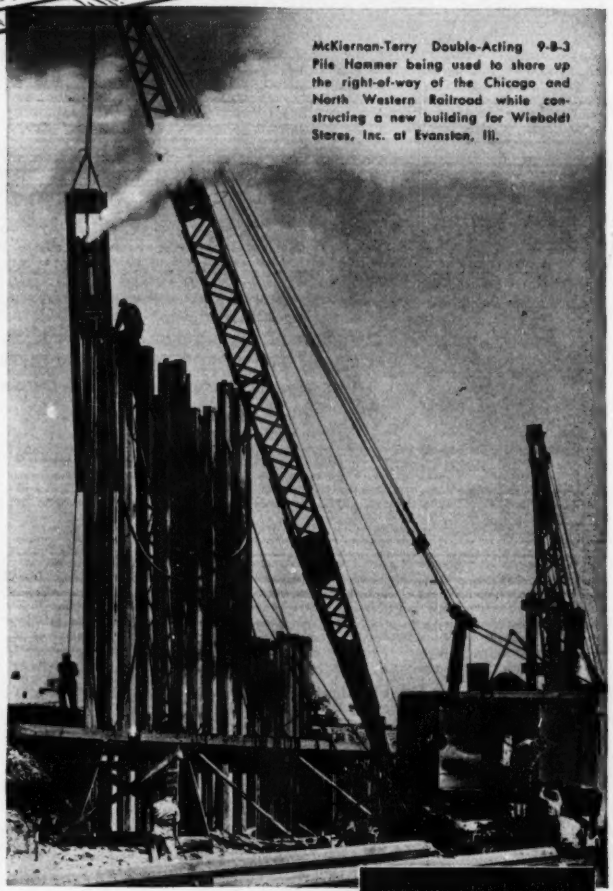
About 40% of the potential buyers who were interviewed already owned houses. Despite the small sample covered, FRB analysts note that this finding represents an increase over the proportion of prospective 1951 buyers owning houses. The shift, they point out, reflects the increase in home ownership since the war.

Growth in home ownership has been substantial. In 1948 the first year for which survey data are available, 49% of the nonfarm families owned their homes. By early 1952, the percentage had increased to 54%.

Veterans' families have shared heavily in this growth. In 1950, 42% of the families containing veterans owned their houses. By early 1952, the proportion of home-owning families in this group had gone up to 49%. Home ownership has increased more rapidly among families of veterans than among other nonfarm families.

RIGHT-OF-WAY PILEDRIVING
that didn't stop a single train!





McKiernan-Terry Double-Acting 9-B-3 Pile Hammer being used to shore up the right-of-way of the Chicago and North Western Railroad while constructing a new building for Wieboldt Stores, Inc. at Evanston, Ill.

LAKE States Engineering Corporation, the contractor on this right-of-way railroad shoring job, supported the railway embankment and the main line tracks by driving 30 ft long sheet piling to a depth of approximately 25 feet with a McKiernan-Terry Double-Acting 9-B-3 Pile Hammer.

Here's what the contractor reports:

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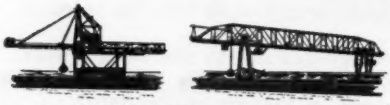

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- **Washington plays Clancy**—This was Washington's week for lowering the boom. Long-time practioners of the art landed on two federal construction agencies—the Corps of Engineers and the Bureau of Reclamation —with fair accuracy.

  It was not hard to find politics in the actions—both from the angle of publicity and the desire to get the linen washed before they could be publicly aired as campaign issues.

- **Morocco again**—First targets were the Corps of Engineers and Lt. Gen. Lewis A. Pick, its chief—in an interim report by the Johnson Subcommittee which has conducted lengthy investigations into facts surrounding construction of four air bases in French North Africa (ENR May 15, p. 21).

  The committee was unhappy with Pick and his conduct before it, (even including a statement, by Rep. Burdick that Pick is "incompetent as an engineer" and some recommendations for discipline), but the net of the report seems to be this:

  The committee will wind up with a four-way charge against (1) the French government for imposing hampering restrictions on manpower and supplies; (2) the Corps of Engineers for unsatisfactory inspection; (3) the contractor, for wasteful practices, lack of supervision and disregard of specifications; (4) the Air Force, for assigning urgent priorities on construction where they weren't proved necessary.

  Chances are, the Corps will heap further blame on the Air Force saying that if AF hadn't demanded readiness in six months from start of construction, things would not have gotten so badly mixed up.

  Pick—with no love for the center of the griddle—issued a fairly mild reply, saying the congressmen are "overcritical," and repeating that he wasn't responsible for assignment of hurry-up priorities.

- **Law violation?**—The Bureau of Reclamation got its criticism through an opinion from the Comptroller General, requested by the House Interior Committee, which has been checking into progress on the huge Eklutna hydro project near Anchorage, Alaska.

  Said the comptroller: The bureau violated the law by overcommitting its $20.2-million authorization for the work, despite Commissioner Michael Straus' explanation to congressmen that the overcommittments (ENR July 24, p. 23) were contingent on getting the authorization raised to $35 million.

  Congressmen—fighting for better control of spending of agencies under their legislative jurisdiction—were "interested" in the ruling.

- **Who's got L. A. housing?**—Los Angeles' Mayor Fletcher Bowron got back from a quick trip to Washington and made one accurate prediction: He said there would be "tirades and name-calling" over a new agreement on the city's much-disputed public housing program.

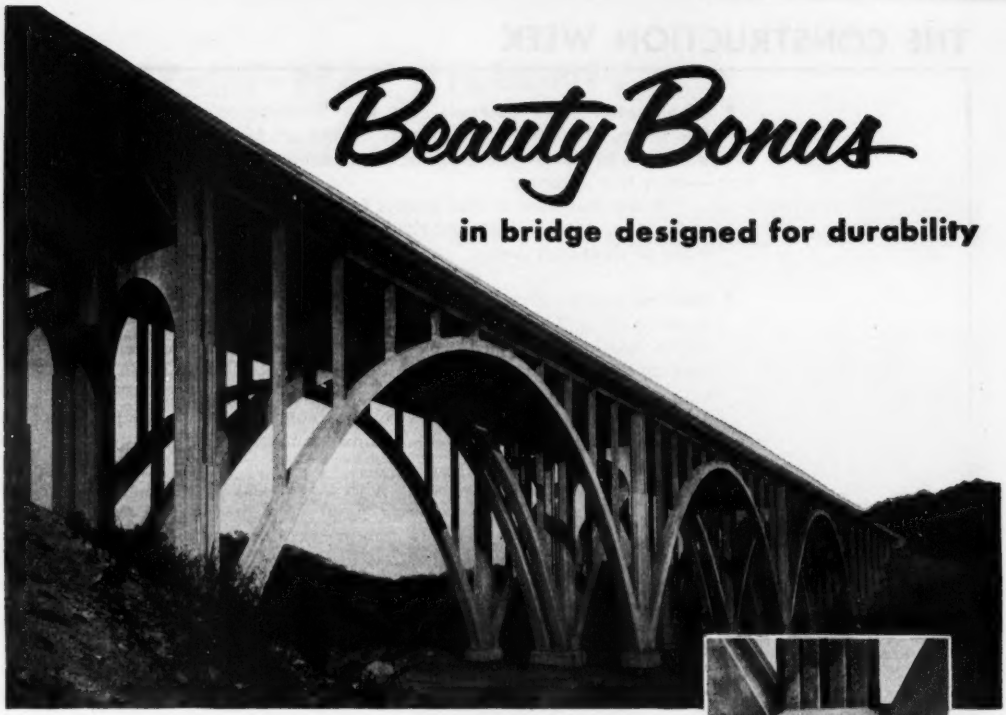
  The fight—between a majority of the city council, and the mayor and the city housing authority—has centered around a $110-million, 10,000-unit housing project for the city (ENR Jan. 10, p. 25). The council voted to cancel the city's contract with the housing authority, the California Supreme Court said the council could do no such thing, voters turned down the proposition by thumping majorities in a referendum.

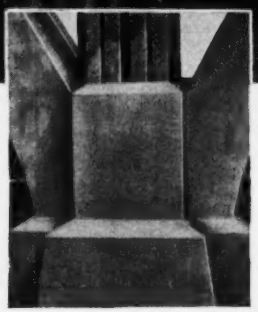
  But Bowron spent two days with federal housing officials, and came back with this deal: The program to be cut to $83 million, the number of units to 7,000, no 13-story units to be allowed. (All must comply with a new three-story limit).

  Anti-housing councilmen, and the committee against socialized housing immediately decried the agreement.

Beauty Bonus

in bridge designed for durability





Superior surface appearance of concrete made with Duraplastic cement shows in this close-up view of an arch pier. Commercial Street Bridge, Penn-Lincoln Parkway, Pittsburgh, Pa. Designed by Pennsylvania Dept. of Highways. Contractor: Dinardo, Inc., of Pittsburgh.

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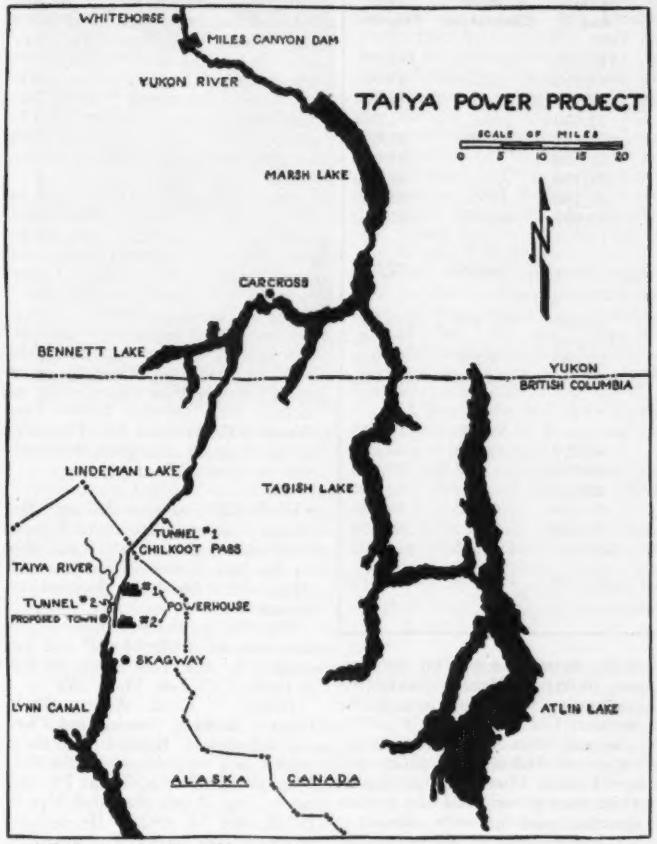


★ Reduction plant located here.

Alcoa offers to construct $400-million Alaska plant

Aluminum Company of America gave defense planners a jolt last week, by hitting them with a daring new plan for expanding aluminum production beyond present goals.

For months mobilization officials have been busy maneuvering to get more aluminum. The Defense Production Administration proposed increased imports from Aluminum Company of Canada, but was stopped by the Joint Congressional Committee on Defense Production. DPA tried to interest some new independent producer in building new domestic facilities, but failed to find a taker.

Since early post-war years, Alcoa has been thinking about building a new aluminum plant near Skagway, Alaska. Its offer to build the plant as part of the Defense Mobilization Plan got a cold reception. Prevailing sentiment among top mobilizers was that Alcoa already is too big.

Last week Alcoa announced it will start construction of a $400-million aluminum smelting project near Skagway as soon as the necessary land can be purchased and government approvals obtained. It would produce 200,000 tons of aluminum annually—more than enough to meet defense expansion goals—unless mobilization officials set out deliberately to block it or it meets some unforeseen snag. And it would be financed entirely with private capital.

• **Details outlined**—The announcement was made by Leon E. Hickman, vice president and general counsel for Alcoa, in a talk to a group of Alaskan businessmen at Mt. McKinley National Park., Alaska. He gave a broad outline of the project (which would be Alaska's largest industrial installation) to be situated in the Taiya valley district. It included plans for the smelting plant, electric power production, transportation facilities, and community development.

The project would require about 20,000 acres in the Taiya district, would take four years to build, and would eventually employ about 4,000.

To produce hydroelectric power for the plant, water would be needed from the headwaters of the Yukon River in British Columbia and the Yukon territory of Canada. At Miles Canyon, where the river flows through a canyon 80 ft wide with nearly vertical walls, a dam would be built. It would raise the level of five lakes—Lindeman, Bennett, Marsh, Tagish and Atlin—to an elevation of 2,200 ft above sea level. This would create a reservoir to regulate the headwaters of the Yukon River at Whitehorse.

At Miles Canyon Dam in the northern end of the reservoir, Alcoa would build a power plant to supply the requirements of Whitehorse and the surrounding areas of the Yukon.

From the southern end of the reservoir, Alcoa would get its water for powerhouses in the Taiya river valley by driving a 13-mi tunnel under Chilkoot Pass in the Continental Divide. The tunnel would feed one powerhouse at the upper end of the Taiya river valley. The water would be discharged and carried through another tunnel to a second powerhouse at the upper end of Taiya inlet.

Each of the two powerhouses would have a capacity to generate about 800,000 hp and each would be built underground for protection.

To take care of the people who will build and operate the plant, Mr. Hickman anticipates construction of a community for about 20,000 people. It would be the largest city in Alaska.

U. S. annual aluminum capacity

(In net tons*)

Producer	In Place Aug. 1	Under Construction	Total Projected
Alcoa			
Alcoa, Tenn.	145,300	.....	145,300
Badin, N. C.	43,350	.....	43,350
Massena, N. Y.	72,000	.....	72,000
Pt. Comfort, Tex.	92,000	.....	92,000
Rockdale, Tex.	.....	85,000	85,000
St. Lawrence, N. Y.	55,000	.....	55,000
Vancouver, Wash.	76,100	.....	76,100
Wenatchee, Wash.	21,250	63,750	85,000
TOTAL ALCOA	505,000	148,750	653,750
Anaconda-Harvey			
Kalispell, Mont.	.....	72,000	72,000
Kaiser			
Chalmette, La.	50,000	150,000	200,000
Mead, Wash.	175,000	.....	175,000
Tacoma, Wash.	25,000	8,200	33,200
TOTAL KAISER	250,000	158,200	408,200
Reynolds			
Arkadelphia, Ark.	.....	55,000	55,000
Corpus Christi, Tex.	40,000	40,000	80,000
Jones Mills, Ark.	97,000	.....	97,000
Listerhill, Ala.	50,000	.....	50,000
Longview, Wash.	31,500	18,500	50,000
Troutdale, Ore.	82,500	.....	82,500
TOTAL REYNOLDS	301,000	113,500	414,500
TOTAL UNITED STATES	1,056,000	492,450	1,548,450

* According to Iron Age

• **Money plans**—Alcoa will build this project "with strictly private financing," Hickman said. "We are not seeking government loans or subsidies for Taiya; we are ready to go ahead with private capital . . . We would even forego any accelerated amortization on the power generating facilities, and would accept certification permitting amortization over a five-year period of as little as 50% of the cost of other facilities making up the project."

He went further. Alcoa does not ask the government to contract to purchase any of the output of the Taiya facilities, and does not ask it to underwrite Alcoa's ability to sell what is produced at Taiya, as it has done on some other expansions of metal producing facilities. Alcoa asks only to be given "an even break and equal opportunity with respect to other producers and sources of aluminum involved in any future stockpile purchases."

• **Obstacles**—To build the project, Alcoa still has two hurdles, Mr. Hickman said.

First, it has to acquire the 20,000 acres of land in the Taiya district and under the present laws affecting Alaska, there is no way for the company to buy it. Alcoa is counting on Congressional permission to make the purchase.

Second, water required for the operation of hydroelectric plants will have to come from Canadian sources. Alcoa must get approval of Canadian agencies to use the water. Already it has had preliminary discussions on this phase with Canadian governmental officials in Ottawa and in British Columbia.

Although Mr. Hickman did not mention it, there is one other possible snag: Washington reluctance to see the nation's No. 1 aluminum producer grow any bigger.

Aluminum from new facilities is pushing the nation's capacity over one million tons per year. Currently the schedules of initial production from now potlines are being reshuffled as a result of the steel strike.

Announcement of plans for a third round of aluminum expansion has been expected from the Defense Production Administration for some time. The plans are designed to lift reduction capacity to a level that would meet the requirements of total war and probably will also include stockpile supply.

Florida licensing board hears engineer's case

The Florida State Board of Engineer Examiners last week heard pro and con evidence on charges of professional malpractice against Laurence G. Farrant, Miami consulting engineer. But it will be several weeks before the board's decision is announced.

The board has power to revoke Farrant's registration or suspend it. In either case, Farrant, under Florida law, has the right of appeal to the courts.

At the hearing, which was held in Miami, the five-member state board heard several other engineers testify that Farrant's structural design for three south Florida reinforced concrete jobs were "faulty and negligent."

Farrant, in turn, submitted 23 letters from other engineers, architects, and general contractors attesting to his ability. He also submitted a list of projects on which he worked while associated with architect Robert Law Weed in Miami and a list of projects he had designed since going into business for himself three years ago.

• **Waffle-slab collapse**—Among the charges made was that several failures occurred during erection of a roof slab for the Atlas Terminals warehouse at Ojus, which had been designed by Farrant.

The roof is a flat slab made of precast concrete "waffle blocks" and was erected by the Youtz-Slick lift-slab method (ENR Feb. 21, p. 38).

Robert F. Cook, director, Dade County Building, Zoning and Planing department, testified that three crashes were reported to him, the first, Mar. 18 (ENR Mar. 27, p. 25), the second, Apr. 2, and the third, May 9, (ENR May 22, p. 25). He said his inspector, W. V. Cook, had attributed the first crash, which occurred during the lifting of a floor slab, to "mechanical failure." Reporting on the second crash, the inspector had said it was due to the failure of the male threads on a 10-in. pipe stem used to anchor the slab to a steel collar at the top of a 14-ft. high, 10-in. dia. reinforced concrete column.

John L. McCullough, Jacksonville engineer who had investigated the complaints against Farrant for the Board of Engineer Examiners and preferred the charges, testified: "My analysis leads me to the conclusion that not enough steel was used in these slabs and that the bars used were not properly placed. In my judgment, the steel used was subject to about 125% overstress."

Farrant, in rebuttal, submitted data obtained by photo-reflective stress analysis, known as Presan, obtained

LAURENCE G. FARRANT awaits outcome of hearing.

with mirrored models of the slab. The design had been based on this.

He also submitted reports from two testing laboratories indicating that under a test load of 45 psf or 2.25 times live load, the deflection was "well within limitation of the ACI code" and "the slab stood up well under the test." Board member Oliver Semmes, Jr., however, questioned the adequacy of the 45-psf load.

• **Roof beams cracked** — Another charge the board considered was that four 23-ft cantilevered roof beams in the Hollywood, Fla., municipal bandshell had failed because of faulty structural design by Farrant. The beams had cracked at a slight bend near mid-span. The failure occurred Mar. 5, 1951, while a vermiculite-concrete roof slab was being poured.

O. J. Jorgensen, of Jorgensen and Shreffler, Miami firm of consulting engineers, employed by the city of Hollywood to redesign and rebuild the roof, claimed the beams cracked because reinforcing bars were continuous around the bend in the beams, instead of being terminated with hooks.

"Moreover," he said, "the ¼-in. stirrups used to tie the upper and lower bars together were spaced too far apart."

• **Roof beams sagged**—The hearing also dealt with charges that excessive sag developed in a 29 ft long precast roof beam in George Washington Carver School, Miami, a $555,759 project, for which Farrant did the structural design and supervised construction.

NPA prolongs controls

Government controllers plan to hold a tight rein on construction for the next six months. The National Production Authority this week laid before its construction Industry Advisory Committee a program that calls for retention of present controls, with few changes, until Apr. 1.

For that date, the agency promises liberalization of the rules, but not abandonment. NPA is drafting a new direction to CMP Regulation 6 outlining the changes to take effect in the second quarter of next year. It will be issued promptly.

Under the new direction, builders will be able to apply increased ceilings to their orders for second-deliveries. But until Apr. 1 they will have to live under existing limitations, improved in minor respects by a forthcoming amendment to Reg. 6.

NPA blames the steel strike for the nine-month delay in liberalizing the rules. Administrator Henry H. Fowler last May expected to make the changes July 1 of this year (ENR May 15, p. 23).

Had there been no strike, construction controls probably would have been removed entirely before next Apr. 1. Now the agency foresees the need of continuing them even beyond that date.

• **Some relaxation**—Some few concessions take effect immediately under the new amendment, when issued. The housing order M-100 is to be revoked and residential rules incorporated into revised CMP Reg. 6. House builders will then be under the same rules as other non-recreational construction. For one thing, they will be able to use without limitation any materials they had in inventory before Oct. 1, 1951.

Other minor improvements to become effective immediately will:

• Broaden the definition of production equipment to allow use of a DO rating for purchase of products needed to equip a hospital or school project for operation.

• Permit the use of a DO rating for any product that is ratable under other NPA regulations. Further, applications for recreational projects that are parts of school or hospital programs will be handled by the program agency —Federal Security Agency or Veterans Administration—instead of by the NPA construction controls division.

But the big changes are postponed to Apr. 1. For that date, NPA told the committee, the new direction will specify these relaxations:

• Recreational construction projects will come under the same rules as other jobs and will be permitted to self-authorize materials purchases up to these limits per project, per quarter: 5 tons of carbon steel (including not more than 2 tons of structural shapes), 500 lb. of copper and 300 lb. of aluminum.

• Restrictions on self-authorized orders for wide-flange beams and columns will be removed.

• Builders of one-family to four-family houses will be allowed to self-authorize up to 1,500 lb of structural shapes per dwelling unit.

• Owners of apartment projects will be given self-authorization rights.

• Self-authorization quantities will be revised generally, and projects for water, sewage disposal, public utilities and transportation will be lumped under industrial construction.

All these projects in the broadened industrial classification will be able to self-authorize up to 25 tons of steel per project per quarter. Also, the direction will permit self-authorization for elementary and secondary schools up to 50 tons per project—not per quarter. Highway projects will get a self-authorization increase of 10 tons in structural shapes.

Earthquake takes toll

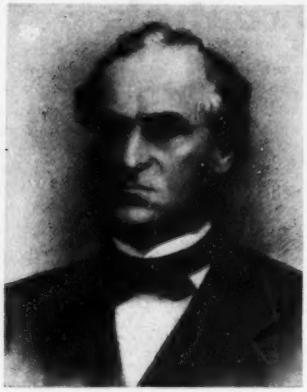
Following the July 21 earthquake that rocked Southern California, a sympathetic disturbance struck at 3:42 p. m. Aug. 22 centering close to Bakersfield. Two persons were killed, and more than 20 were seriously injured. Damage was estimated at $20 million, bringing total damages for the temblors to about $60 million.

California Institute of Technology, which put the July 21 earthquake at 7.5 on the magnitude scale (ENR July 24, p. 26) gave the aftershock a rating of 6. Cause of the disturbance was slippage along a fault six miles east of town. The July 21 quake centered on a fault some 40 miles away.

Prof. George W. Housner, of Caltech, reported to ENR that older commercial buildings were extensively damaged, chiefly by toppling of brick parapets not properly tied to the main structure and cracking of brick walls.

Many of the buildings had been weakened by previous shocks. New buildings and residences were not damaged. The damaged buildings were not designed or constructed to resist earthquakes.

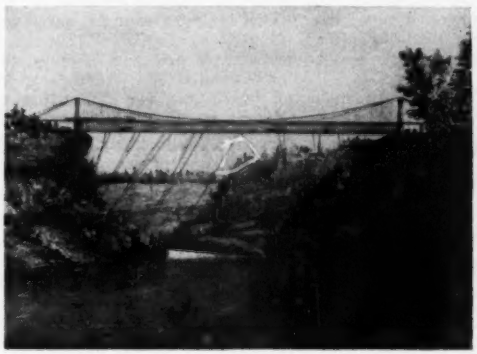
Tehachapi, almost wrecked by the earthquake a month ago, suffered little new damage.



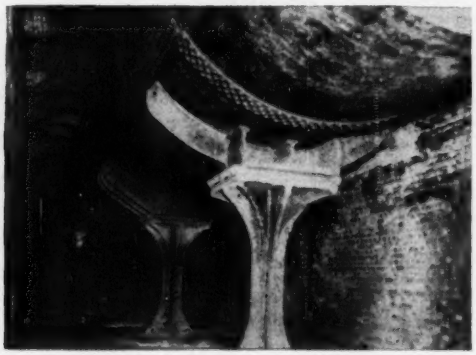
FIRST ASCE PRESIDENT—James Laurie served for the first fifteen years, maintaining a spark of life in the infant ASCE until post-Civil War days brought a great upsurge of construction demands.

FAMOUS MEMBER—John B. Jervis, whose outstanding accomplishments—Delaware and Hudson Canal, Croton water supply, Erie Canal enlargement—helped establish a need for ASCE.

CENTENNIAL PRESIDENT—Carlton S. Proctor, contemporary foundation expert, has worked untiringly to give the ASCE centennial celebration real meaning for the future of America.



FAMOUS STRUCTURE—Roebling's Niagara suspension bridge of 1853 introduced the deep stiffening truss and reversed a record of failures that had plagued other designers. When the lesson was forgotten nine decades later the Tacoma failure resulted.



EARLY AQUEDUCT—New York City's Croton supply was brought to the city in wrought iron mains, here shown on cast iron pedestals inside the famous High Bridge Aqueduct. ASCE was founded in the office of the Croton Aqueduct Department.

Salute to the ASCE

Next week, as the largest assembly of engineers in history convenes in Chicago to celebrate a century of engineered progress in America, it will only be the members of the American Society of Civil Engineers who can savor the achievements of a full hundred years. For, in 1852, when the ASCE was founded, all engineers who were not military were "civils", even though they might be following mining or mechanical engineering pursuits. It was not until later that the specialists branched off into national technical societies of their own or—as later happened—formed societies in response to such new developments as electric power generation or chemical discoveries.

So while the centennial is properly devoted to the celebration of all the engineering achievements that have brought standards of living in the United States to such a high level, it offers a particular salute to the American Society of Civil Engineers, whose founding it commemorates.

• **Early years**—The founding of the ASCE occurred Nov. 5, 1852 in the office of Alfred Craven, chief engineer of New York City's Croton Aqueduct Department, where ten prominent engineers of the period elected James Laurie, consulting engineer of Boston and New York and former chief engineer of the Central Railroad of New Jersey, to office as the first president.

Laurie, one of the founders in 1848 of what is now the oldest engineering society in the U. S.—the Boston Society of Civil Engineers—had high enthusiasm for repeating this local success in a national organization. But after a few years of meetings interest waned, and the infant society was dormant until after the Civil War, even though Laurie continued to promote it. In 1867, he and eight other members got it started again, and this time it took

hold. After being president for 15 years Laurie was succeeded in the office by one of his former railroad associates in New England, James P. Kirkwood.

• **Famous names**—Kirkwood, like Laurie, brought prestige to the office of president of the society by his own accomplishments—a precedent that has continued unbroken. Already a railroad engineer of note, he turned to water supply, where he achieved fame by making St. Louis' turbid Mississippi River water drinkable with one of the nation's first filtration plants.

Other famous ASCE presidents of the early days, when the country's growth hinged on railroad building and its health on pioneering in sanitation, included Alfred Craven (4th president) who, as chief engineer of the Croton Aqueduct from 1849 to 1868, satisfied New York City's increasing water needs; Julius W. Adams (6th president), who first applied engineering design to a sewerage system, that of Brooklyn; Ellis S. Chesbrough (8th president), who was the father of water supply and sanitation in Chicago; Albert Fink (10th president), who invented the famous truss that bears his name; Frederic Graff (15th president), who gave Philadelphia cast-iron water mains when the prevailing pipe in use consisted of bored-out logs; Octave Chanute (21st president), who was not only a noted railroad engineer but a pioneer aeronautical enthusiast to whom the Wright brothers paid high tribute; and George S. Morison (25th president), who spanned the Mississippi River with five bridges, the Ohio with one and the Missouri with ten.

It is the achievements of such of its presidents as these that the ASCE will be commemorating next week—as well as those of many members who did not occupy the presidential office, but whose deeds advanced the nation's growth and the profession's progress. There are the Roebling's and their great suspension bridges, Squire Whipple and his treatise on truss analysis, Hayes Linville and his long pin-connected truss spans, James B. Eads and his famous arch over the Mississippi, Wm. Sooy Smith and the first all-steel bridge at Glasgow, Mo., and John F. Stevens and his Northern Pacific Railroad and Panama Canal.

To this famous company will assuredly be added the name of James Bloomfield Jervis, characterized as "probably the outstanding professional engineer of the Mid-19th Century" by James Kip Finch, retired dean of engineering at Columbia University and the profession's outstanding historian. In a review of "A Century of Progress in Civil Engineering", which Dean Finch has just written for ASCE publication, he refers to Jervis thus: "He began his career on the Erie Canal in 1817. He closed it fifty years later with the rehabilitation of the Pittsburgh, Fort Wayne and Chicago Railway. And what a remarkable career it was! He engineered in 1825-30, the Delaware and Hudson Canal, incline and railroad; he built the first railroads in New York State, the Mohawk and Hudson and the Schenectady and Saratoga, in 1830-33; he planned the enlargement of the Erie Canal and its Chenango extension. He put through the first Croton water supply of New York, the first notable American gravity supply in 1836-42 with the famous High Bridge and the distributing reservoir which some of us may recall as the present site of the Public Library on 5th Avenue and 42nd St.; he was consulted on Boston's Cochituate supply; on the Hudson River Railroad; and he toured Europe and stood with Robert Stephenson at the straits of Menai when the remarkable tubes of the Menai Bridge were put in place; he worked on the Michigan Southern and Northern Indiana Railway in 1850-51 and on the Chicago and Rock Island, and he pulled the Pittsburgh and Fort Wayne out of bankruptcy to a ten per cent dividend in a bit over two years."

• **Changing character**—The Erie Canal has been called the first American engineering school, and Jervis was both student and professor. His were the kinds of accomplishments that pointed the need for a national engineering society, and his development from canal to railroad builder epitomized the change in the nation that was taking place when the ASCE was founded.

Jervis, and more especially the men who followed him, were a product of the first half of the century that will be celebrated. Dean Finch points out that they operated in an era of timber and wrought iron construction that reached slightly beyond the threshold of the steel age, being dominated by railroad building, but still giving some attention to the growing problems of urban living. For the most part they were men without formal technical education, but of great native ability and intuitive engineering judgment.

The second half of the century of celebration—the first half of the 20th—witnessed another change and transition. It ushered in the highway era, a great dam building age, and the epoch of the skyscraper. It was marked by mechanization of construction, by scientific approach to design, by research and industrial growth.

All this had a profound effect on the ASCE and the profession that it served. No longer could engineers cope with problems by intuition. Educational preparation became necessary to train more engineers, more quickly than the school of experience possibly could. Specialization in one phase of activity became more necessary. The construction man in the field needed to be armed with the new and expanding scientific knowledge if he was to succeed.

From a small organization of outstanding leaders in the profession, the ASCE thus had to expand and serve the young and the old, the fledgling engineer and the experienced practitioner. Its membership is now 34,000, of which 45% are less than 32 years old. In addition it has 10,000 student members in 133 engineering colleges and universities.

In arriving at this milepost in its history, the ASCE roster in the second half of its first century recorded other great names: Lindenthal, Modjeski and Burr (bridges); Ransome (reinforced concrete); Talbot (concrete testing and railroad track stresses); Parsons and Ridgway (subways); Hazen, Herschel and J. Waldo Smith (hydraulics and water supply); Noble and Moran (foundations); Marston (highways); Moisseiff (suspension bridges) and Holland (subaqueous vehicle tunnels); to mention a few.

To these are now added the equally illustrious but more familiar names of our present times.

All these men and their accomplishments are what the ASCE has to celebrate at the end of its first century. It is a celebration that can take pride in the past, but look to the future with hope and confidence that the record of accomplishment will continue—that the contributions to a growing America will be at least as substantial and even more numerous than in the past. The salute next week to the ASCE and the profession and industry that it serves will be well deserved.

The Cover

The stamp chosen to commemorate the ASCE centennial shows two bridges—the George Washington span over the Hudson at New York, certainly the premier bridge of the century, and a covered timber bridge over Octoraro Creek in Lancaster County, Pa. Completed in 1852 it served for 97 years of the century before it was doomed by a water dam and then burned by Hallowe'en pranksters, according to Francis S. Friel, consultant on the dam who supplied the picture for the stamp. Now gone, this early pioneer will not be forgotten thanks to the stamp that will go on sale Sept. 6 in Chicago.

OFFICIALS OF AEC AND F. H. McGRAW CO. protested the latest walkout. (Left to right) F. C. Belcher, AEC; F. J. Mayo, project manager for McGraw; and E. A. Wende, AEC.

No-strike pact signed at Paducah

A plan to block further unauthorized walkouts at the $1-billion atomic energy plant in Puducah was agreed upon last week by both management and labor.

The agreement grew out of an "outlaw" strike denounced by both union officials and spokesmen for F. H. McGraw Co., the contractor.

The strike had been precipitated by a picket line of carpenters which kept most of the labor force off the job.

More than 12,000 of the 18,400 construction workers at the $1-billion atomic energy project at Paducah, Ky., had been kept from work by striking AFL carpenters and millwrights. Pickets had been posted at the three entrances to the project despite a directive from the international union which branded the strike as unauthorized and ordered the strikers to return to work. The walkout started Aug. 11.

Similar trouble involving the millwrights has tied up construction and rehabilitation work at the huge Indiana Ordnance Works at Charlestown. The millwrights posted pickets at the entrance to the works August 19 and idled 4,000 workers. AFL craft union leaders blasted the millwrights' action and signed a statement describing the strike as "outlaw," "illegal" and "unauthorized." The statement was signed by the millwrights' own business representative.

The two walkouts imply that the recent policy declaration of 19 AFL leaders banning jurisdictional disputes and similar wrangles has fallen on deaf ears among some of the union's membership.

• **Probe**—The Atomic-Energy Labor Relations Panel began a probe into this latest walkout at Paducah. John Dunlop, chairman of the Joint Board for the Settlement of Jurisdictional Disputes, arrived in Paducah last Monday to start the inquiry.

The trouble started on Aug. 11, when plumbers and pipefitters left their jobs and established a picket line. Those pickets were removed Aug. 14 but a few minutes later union carpenters and millwrights took their places.

The Paducah Building and Construction Trades Council, composed of all AFL crafts employed on the atomic and associated projects, issued a statement Aug. 15, declaring that the carpenters and millwrights picket line "is illegal and unauthorized."

The council urged all construction workers at the project to report for work Aug. 18, and disregard the picket lines. Fewer than one-third of the workers heeded this order.

Neither the plumbers and pipe fitters nor the carpenters and millwrights had filed any grievances with F. H. McGraw Co., prime contractors for the job, or with the AEC.

After the picket line was removed on Wednesday (Aug. 20), a full scale return to work took place on Thursday (Aug. 21).

The agreement was signed four hours after the carpenters withdrew their picket line. The agreement was drawn up by the Atomic Energy Labor Relations Panel.

Part of the agreement calls for penalties for workers taking part in wildcat walkouts and failing to return when ordered by the company and union.

• **Behind the trouble**—It appeared that both walkouts resulted from rebellions within the craft's ranks.

Pipefitters, it was reported, opposed their union's granting McGraw permission to use iron-worker welders on work usually assigned to pipe-fitter welders when the latter were not available.

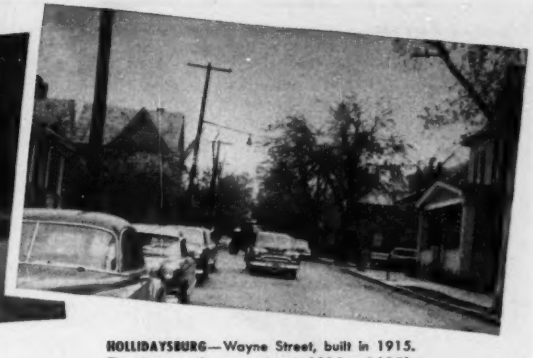
Carpenters and millwrights, it was reported, walked out in an effort to force an international representative to go to Paducah and investigate the union's leadership. Earl Welch, an international representative, arrived in Paducah Aug. 18, and immediately ordered the picket line dissolved. This order was ignored.

Local officials of the AEC and McGraw blasted union workers who "have been trying to settle their international troubles at the expense of progress on the important national defense project."

Said E. A. Wende, AEC Kentucky area manager: "This is the kind of thing that subversive agents, if they were at work here, would cause. The walkouts are absolutely pointless and no one—except the Russians—benefits."

Said F. J. Mayo, McGraw's project manager: "Each day we fall behind schedule in completion of this project, we contribute that much to the possible defeat of the nation."

At the Indiana Ordnance Works, located just across the Ohio River from Louisville, Ky., the millwrights walked off the job reportedly in protest over the demotion of a superintendent—a union member—to general foreman.



HOLLIDAYSBURG—Wayne Street, built in 1915. The photographs were taken in 1925 and 1951.

ALTOONA—22nd Avenue was built in 1922. Pictures were taken in 1925 and in 1951.

Here today – *and still here tomorrow*

that's the story of CONCRETE streets in western Pennsylvania

The streets pictured here are a few of the old concrete pavements that have served western Pennsylvania cities for a quarter century or longer. These pavements are still good for many years of service.

The outstanding service record of these streets is typical of the durability and dependability of concrete pavements in all parts of the country. With concrete pavements it is truly a case of "here today—and *still here tomorrow.*" Today's concrete streets are even better because of improvements in engineering design, materials and construction methods.

Public officials, engineers and taxpayers have found again and again that concrete streets are moderate in first cost, cost far less to maintain and give more years of service. Result: ***low annual cost.***

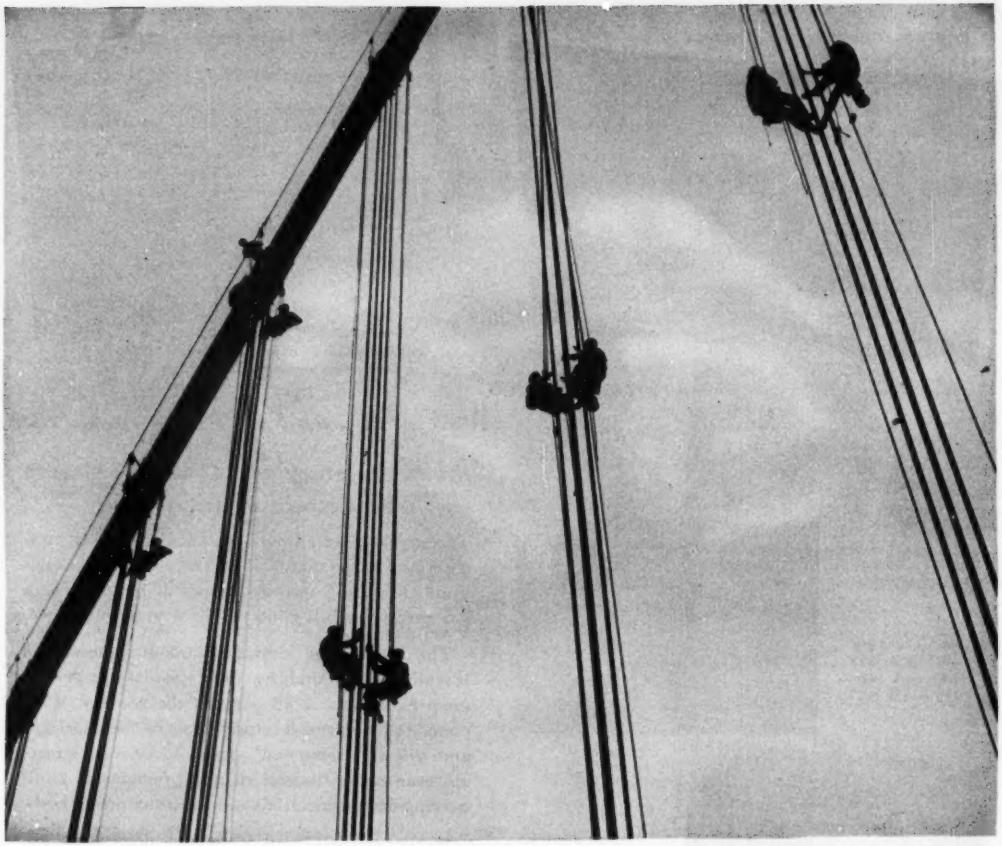
ROCHESTER—Pleasant and Brighton Streets, built in 1925. Photos taken 1925 and 1951.

PORTLAND CEMENT ASSOCIATION

33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

WASHINGTON—Terrace Avenue, built in 1927. The photographs were taken in 1929 and 1951.



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1616 Walnut Street, Philadelphia 3, Pa.
612 Howard Street, San Francisco 5, Calif.

119-day strike ended in Philadelphia

Members of the operating engineers union went back to work Aug. 19, ending the 119-day strike which had virtually halted heavy construction in the Philadelphia area.

The engineers, out since May 1, voted at a mass meeting last week to return to work and arbitrate their differences with three contractor associations later. The contractors offered a 40-cent an hour increase to most engineers.

Projects which had been tied up for various periods of time started up again:

- The $8-million International Airport Terminal Building job was resumed for the first time in 10 weeks.
- The Schuylkill Expressway project near West Conshohocken resumed after a three-months delay.
- The Jefferson Hospital's 300-bed extension started again.
- The Market Street Subway extension resumed.
- The New Lankenau Hospital proceeded.
- A score of city sewer and paving projects plus many industrial jobs began to operate.
- The biggest project in the area—the $400-million Fairless Works of the U. S. Steel Co. at Morrisville, which was virtually halted two weeks ago when only about 1,000 of 10,000 construction workers were on the job, was resumed.
- Work started up at the $2-million General Store Supply Office of the Naval Aviation Supply Depot.

Members of other AFL unions returned to the jobs when Norman Blumberg, secretary-treasurer of the Philadelphia Building and Construction Trades Council, announced that the council had ended its ban on projects where engineers were employed. The ban went into effect two weeks ago in retaliation for the loss of work by some 6,500 council members furloughed because of the engineers' strike.

• **Return voted**—The back-to-work vote was held at a meeting of about 3,500 members of Locals 542, 542-A, 542-B and 542-C at Town Hall, Philadelphia.

Roy J. Underwood, president and business manager of the locals, recommended the back-to-work action.

"Under the present circumstances, I think it is all we can do," he told the union membership. He was referring to the recent "pressure" brought to bear on the union to end the long strike, Underwood stated.

The strike was backed from the start by the 35,000 members of the Maritime Trades Department, of which the operating engineers union is a member. The MTD stuck by the engineers to the end.

The building trades council, angered because the engineers' strike was throwing its members out of work, moved in retaliation. The council ordered its men off all jobs where the engineers were still working.

At about the same time, William E. Maloney, international president of the engineers, told Underwood that the strike should be halted and the contractors' proposals accepted.

And finally, the executive council of the American Federation of Labor, meeting in Atlantic City last week, threw its support behind Maloney and against the locals.

• **Lawsuits and proposals**—The locals had filed a bill of equity in U. S. District Court in Philadelphia, charging that the parent union teamed up with the contractors in unlawful "concerted action" to force the strikers to return to work.

Federal Judge Grim, on Aug. 15, proposed a settlement of the strike and offered 9 points for an agreement. It was these that the engineers voted to accept.

Under Judge Grim's proposal, the union and the contractors will thresh out their issues with Dr. George W. Taylor, of the University of Pennsylvania's Wharton School, acting as arbitrator.

The terms of any wage agreement they reach will be retroactive only to May 1 this year.

Originally, the union had demanded a pay boost retroactive to May 1, 1951.

Arbitration will begin "forthwith" with each side allowed three days for testimony. A decision will be reached within ten days after the presentation of evidence.

Each side will drop all court cases pending against the other.

The union had originally asked a 25-cent hourly increase retroactive for a year from last May 1, a 40¢ raise when work is resumed, a pension and certain changes in working conditions.

The contractors had proposed 40 cents an hour for most operators, 39 cents for the majority of the remainder, and 30 cents more for oilers and apprentices, with none retroactive beyond May 1 of this year.

CISC vacancies filled

Duncan Campbell, a public member of the Construction Industry Stabilization Commission since February, is the new co-chairman of the commission. He was formerly the labor mediator for Public Works Administration and Federal Works Agency.

The vacancy filled by Campbell was created when Archibald Cox was moved up to the chairmanship of CISC's parent body, the Wage Stabilization Board. CISC Executive Director Laurence E. Seibel moved up from alternate to regular public member.

No compensation for Detroit strikers

Some 4,200 workers seeking state unemployment compensation after a strike by AFL building tradesmen in the Detroit area in May have been turned down by the Michigan Employment Security Commission. Four groups of building trades workers are involved.

Claims of 165 carpenters and helpers were denied because of the commission's ruling that they were actively engaged in the strike. The state law prohibits payment of unemployment benefits to strikers. Some 1,750 members of six other unions were disqualified on grounds that they too were on strike. Plasterers and plumbers, who refused to cross carpenters' picket lines, were participating in a sympathy strike, the commission ruled, and so disqualified themselves.

A fourth, miscellaneous group was turned down because employers indicated the workers were unemployed at the time of the strike, due to a lack of work. The unions will appeal the commission ruling for all groups.

West Canada construction locked in 10-week tie-up

The 10-week-old construction tie-up at Vancouver, B. C., continued last week with the United Brotherhood of Carpenters and Joiners (AFL-TLC) and painters still refusing 10 and 15-cent pay boosts (ENR Aug. 7, p. 33).

Carpenters went on strike June 10 asking a 50-cent hourly increase. Immediately the Greater Vancouver Contractors retaliated by shutting down all major operations on June 12, followed two days later by a painters' strike for a 30-cent hourly pay boost.

The shutdown idled about 1,800 carpenters and 6,000 other workers.

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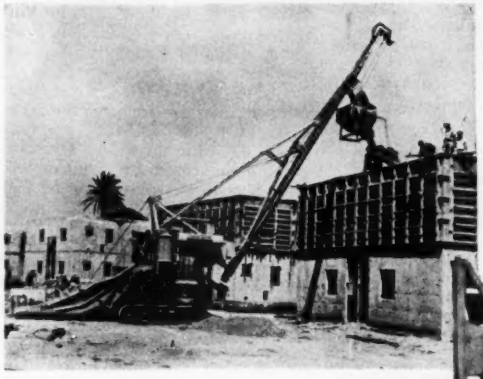

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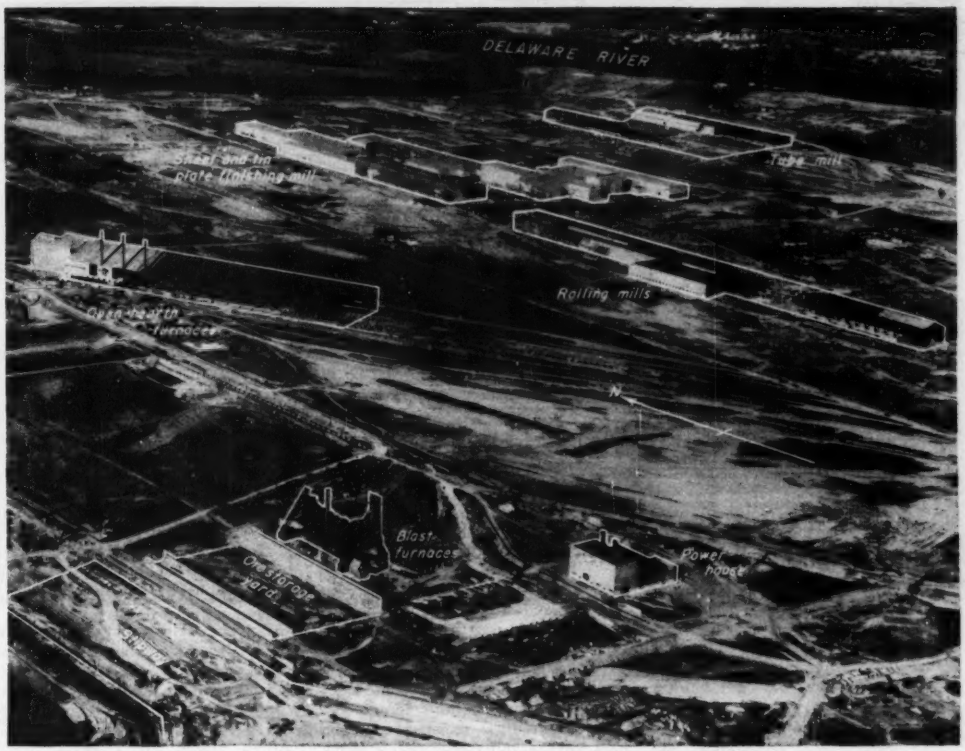


NEW EAST COAST steel mill covers 3,800 acres. Major construction areas are outlines. (Fairchild Aerial Surveys, Inc.)

Fairless Works yields new construction ideas

FAIRLESS WORKS, U.S. Steel's near-half billion-dollar mill on the Pennsylvania side of the Delaware River just below Trenton, N. J., is a grand display of construction art.

Several branches of engineering are in the act, which, because of the time-pressures of national defense, has had to be performed with extraordinary coordination.

This fall, only a year and a half after construction began, the first steel will be produced. Shortly thereafter, products like tinplate and coiled sheet steel will come off the line.

On the 3,800-acre site there are enough civil, electrical, mechanical and chemical engineering developments to intrigue men in those fields for many months.

Civil engineering interest centers on four items:

1. A so-called "tub foundation," which was a construction time-saver in several ways.

2. Dry excavation of the Delaware River slipway to accommodate ore boats.

3. Cathodic protection—to an unprecedented extent—of foundation piles, underground pipes and electrical cables against electrolysis failure.

4. The choice of siding and roof materials to enclose the vast mill buildings.

ENGINEERING NEWS-RECORD previously has reported on the works' water supply and waste treatment system (July 10, p 40 and July 17, p 44), and the general excavation and foundation work that got the project under way quickly (Sept. 6, 1951, p 28).

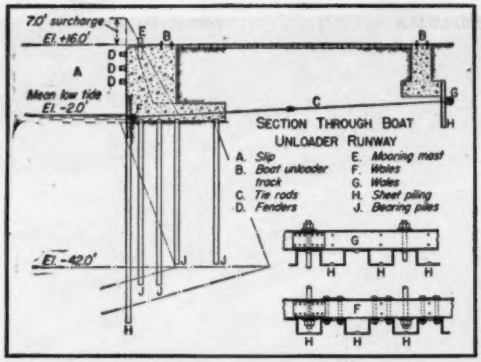
These developments, along with those in other engineering fields, have been the result of meeting and meshing two almost mutually exclusive requirements:

A facility had to be built with the utmost speed, but it was to embody the latest steelmaking techniques—some of them not yet fully developed.

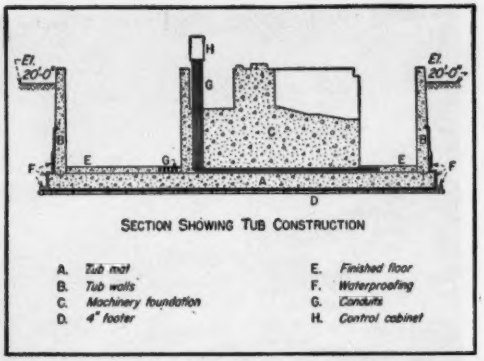
For designing the project, U.S. Steel had only a nucleus of engineers experienced in steel mills. A large number of recruits had to be put on the mass of work. In such a case it might have been logical to adapt ex-

SOME FAIRLESS WORKS FACTS

Steelmaking capacity: 1.8 million tons annually
Ground broken. March 1, 1951
Full operation: July 1, 1953
Number of prime contractors: 200
Number of subcontractors: 2,000
Number of sub-sub contractors: 2,000
Number employed on site construction: 10,000
Number of people working for all contractors: 3,000,000
Number of firms selling to contractors: 130,000
Engineering effort: 9.5 million man-hours



WHARF in ore-ship slipway features sheetpile bulkhead tied back to anchor wall, plus stress-relieving platform.



TUB FOUNDATION was surprisingly simple device for accommodating machinery when machines hadn't been designed.

isting mill designs, letting the new men mass-produce slightly modified copies. Then there would be no question about meeting time schedules.

As a matter of fact, the building superstructures could follow conventional lines—with some change in overall layout.

But heavy, complicated foundations for up-to-date equipment would be entirely different from their predecessors. And the new equipment would have to be used in order to make steelmaking pay at Fairless Works.

• **Tub foundations**—Equipment designs, then, could become a real bottleneck at an early construction stage—when machinery foundations should be built. The bottleneck was neatly by-passed by a surprisingly simple structure, the tub foundation.

A waterproof open-topped box designed against uplift, the tub could be built at the location for a piece of equipment. (Designers of course knew the general size and shape of new machines.) Later, when equipment design and its resultant foundation design were complete, the actual foundation could be built inside the tub.

U. S. Steel officials say it was proven in final design that all tubs were built for proper layout of equipment, with adequate but not excessive space. Of similar importance was the time advantage the tubs gave to superstructure contractors. Being simple in construction the tubs were built quickly, so column foundations within and adjacent to tubs were ready in the shortest possible time. Other advantages were early discontinuance of dewatering and the early completion of floors.

The time these tubs saved at some locations was highly significant. One built in June, 1951 did not get its machine foundation until about three months ago. If that tub's excavated area had been left open all that time, it would have been necessary to dewater, with wellpoints, continuously. An alternative could have been to excavate indoors, but either step would have been an expensive hindrance to surrounding work.

In all, sixteen tubs were built. Two of the largest were for the hot strip mill (150 x 900 ft) and for the cold reduction mill (200 x 600 ft). The smallest is 40 x 150 ft. In some cases the tubs contain interior columns.

Not necessarily rectangular (some have ells), a tub consists of a heavy pad and structural walls. The uplift is calculated to be 875 psf when groundwater is at a maximum of +14, or 8 ft above normal. Another design consideration is avoidance of tipping under flood conditions. The resultant of all tub forces is near the center of its gravity. Pad thicknesses range from 2½ to 3½ ft.

In construction, a 4-in. working mat was laid down and covered with membrane waterproofing before pad concrete was placed. The waterproofing was lapped with wall waterproofing up to El. 14.5.

At all construction joints a ¾ x 9-in. plate was keyed across the joint, throughout its length, to act as a water stop.

• **Looping pits**—While tubs go deep, by far the deepest excavations are the looping pits. These are holes into which continuous strips of steel are allowed to feed, or "loop", during the times when momentary line stoppages occur ahead.

As an example, the looping pit on the electrolytic tinplate line goes 50 ft below the main floor. Construction was accomplished by driving a sheetpile cell, mucking the cell and bracing it as excavation progressed. Sheetpiles went 5 ft into a clay layer 60 ft deep. Again, the concrete pad (seal, in this case) and walls were built with enough weight to resist hydrostatic uplift. Waterproofing was accomplished by admixing a commercial waterproofing compound with high-cement concrete. Sheetpiles were left in place as outer wall forms.

• **Slipway and wharf**—Eventually the slipway, where ore boats will unload to stockpiles alongside the blast furnaces, will be deeper still than the looping pits. El. −42, the ultimate depth, is about 16 ft below looping-pit bottom. Until the Delaware River channel is deepened, however, slipway depth is to be −27 ft, or roughly the present channel elevation.

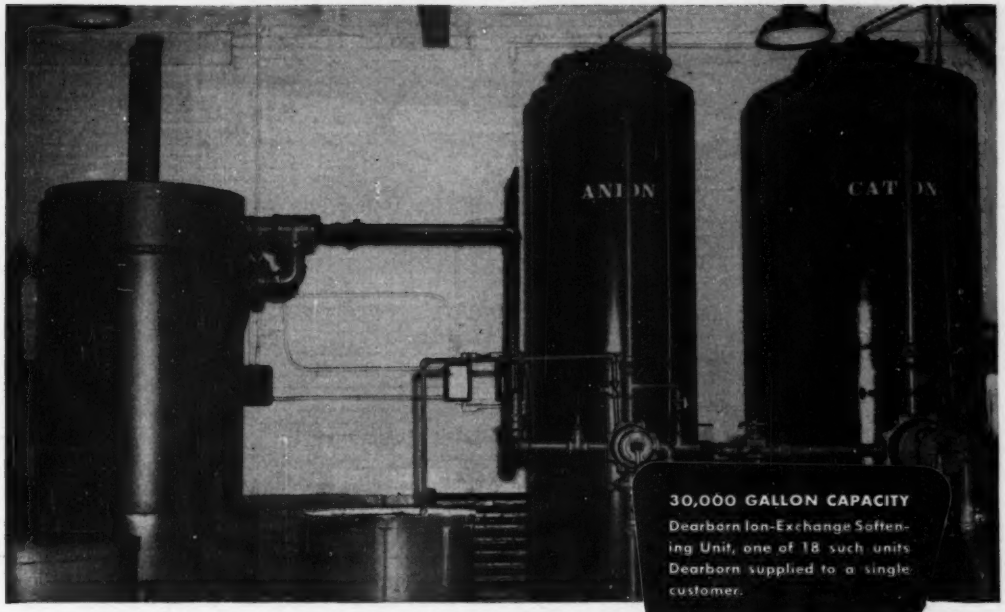
An early surprise in construction was the discovery that wet dredging of the slipway would be more costly than wellpoint-protected dry excavation behind a riverbank berm.

Sheetpile bulkheads 1,000 ft long (both sides) and heavy foundations for ore-handling equipment (one side) were built first. Then slipway excavation proceeded to the 350-ft width between the bulkheads. Bulkheads flare for another 1,000 ft toward the river to provide an ample approach for shipping.

Bulkhead piling is driven to El. −59. It is cut off at +2 and capped with a channel. Above the channel cap on the ore unloader side is a heavy mass of concrete up to +16. Serving as an unloader rail support, this mass rests partly on a pile-supported relieving platform (see drawing). The platform, 25 ft wide, moves the soil shear line back, so that its intersection with the piling is at a relatively low level.

On the other side of the slip, and on the flared walls, the surmounting concrete section is smaller, forming a retaining wall. All concrete receives

(*Continued on page 34*)



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THE LEADER IN WATER TREATMENT AND RUST PREVENTIVES

SLIPWAY EXCAVATION in the dry, protected by dikes and wellpoints, turned out to be less costly than wet dredging. Note how bulkhead wall flares toward river. Paved ore unloader area is in right foreground.

its support from independent 14-in. bearing piles, rather than from the sheetpiles. The bearing piles are spaced on 4-ft centers along the unloader side, 6-ft centers along the other side and the flares. Penetration is below the –42-ft level to provide lateral stability at the foot, although pile loads are developed at higher levels.

• **Bulkhead tied back**—The front wall is anchored, generally at 6-ft spacing, by turnbuckled steel tie rods 3¼ in. in dia with 4-in. upset threaded ends. These rods are attached to a continuous sheetpile anchor wall. In the unloader zone piles 12 ft long bear laterally, partly against the second unloader rail foundation. Elsewhere anchor piles are 16 ft long.

This waterfront construction takes about 35,000 cu yd of concrete and 12,000 tons of steel sheet and bearing piles.

In planning construction, a comparison was made between dredging and earthmoving in the dry. U.S. Steel found dry excavation to be cheaper so, leaving a berm at the river end, the contractor has been performing the excavation in the dry. Behind wellpoints much of the digging was a natural for elevating-loader excavation. Near the bottom tractors and scrapers, as well as shovels and trucks, are finishing off the job.

One worry for awhile was the effect, during dry excavation, of earth loads behind the bulkheads. This way the bulkheads would have to act as retaining walls, with no water pressure on the outside to counteract earth pressures. By figuring the earth to be dry, rather than saturated, analysis showed the wall to be safe for dry excavating down to El. –27, the initial-stage depth. As a safety margin a berm 5 ft high and 10 ft wide at the top is being left in place at the toe of all walls. This berm will be dredged after water is admitted to the slipway.

• **Cathodic protection**—Steel bearing piles and sheetpiles in the waterfront area, as well as all other underground steel in the plant, is protected from electrolysis failure by extensive grounding to magnesium beds. As far as U.S. Steel officials know, this is the first time such protection has been given to an entire plant—certainly to one the size of Fairless Works.

In the past it has been customary to ground buildings and electrical equipment via bare-copper cables to either steel piling or to ground beds of long copper rods.

Galvanic currents induced by the two dissimilar metals in moist earth would then flow from underground steel (pipes, piles, lead-covered cables) to the copper rods, resulting in eventual weakening and failure in the steel and lead. Steel ground rods have been an improvement, but they have not entirely solved the problem.

To prevent this underground corrosion, U.S. Steel is installing the cathodic protection. Physically the system resembles the earlier bare-rod system, but it differs in one important respect: The beds of steel rods have been improved upon by adding magnesium anodes within the beds. Moreover, underground piping is covered and connected to the ground beds; lead-covered cable and copper ground wire are neoprene-coated.

The magnesium being the metal with highest electrochemical potential, all induced currents flow away from it, toward lead, copper and steel. Thus no material is removed electrochemically from the metals whose integrity must be maintained. Because the magnesium anodes eventually deteriorate (into the surrounding ground) means are being provided for their testing and replacement.

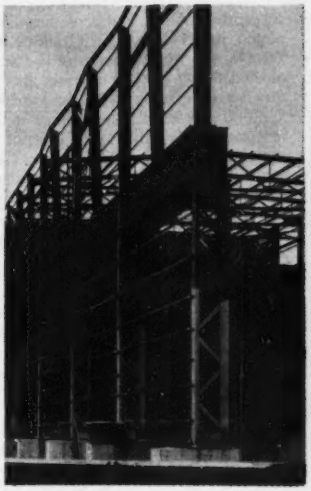
U.S. Steel is using about 50 of the anode beds. They vary from 23 rods and anodes to a maximum of 100 rods and anodes each. An anode consists of a 1-in. steel rod 20 ft long, having a 4-in. square piece of magnesium cast on the center 10-ft section of rod. Plain rods are 40 ft long and rods are 10 ft apart, both ways (see sketch).

To increase effectiveness of anodes they are surrounded by a 6-in. backfill of bentonite, sodium sulfate and gypsum. Anode life expectancy is 20 years.

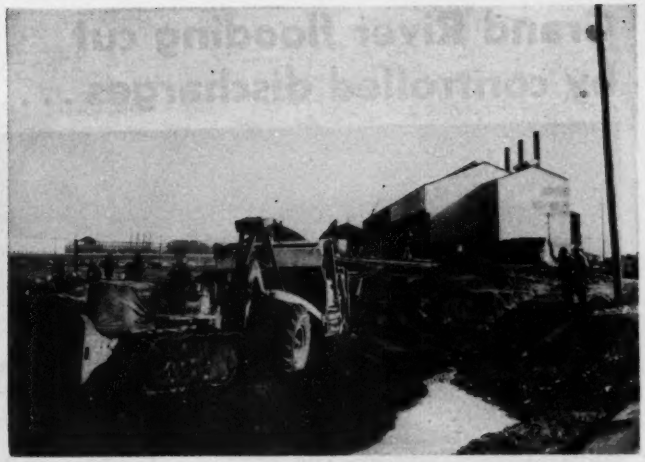
• **Building walls**—The amount of steel that is grounded to these beds is quite large, because building enclosures, as well as their frames, are ferrous. Almost without exception the walls are of corrugated metal, but there are important differences among the types, depending on the use of the individual building.

Buildings that contain heat-producing processes—like the open-hearth furnace building and the soaking pit area—have straight 18-gage galvanized corrugated sheet siding.

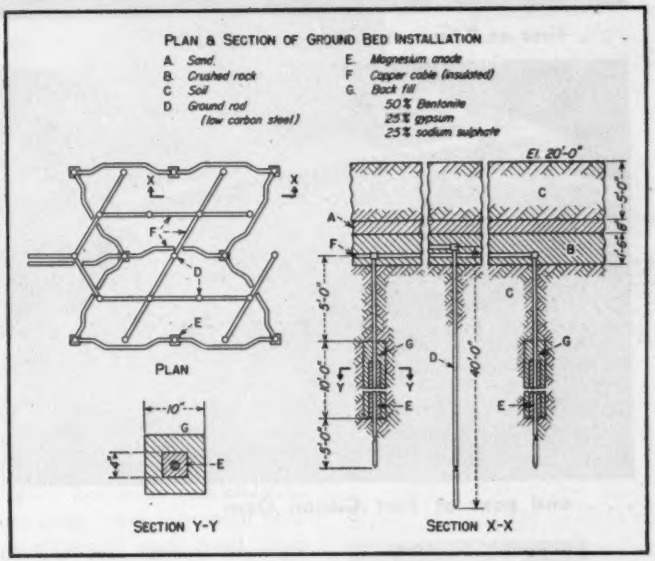
Most mill buildings have a sandwich-wall construction that insulates the interior against the sun's radiant heat. These walls consist of two layers of the galvanized corrugated metal, separated by an inch of glass fiber.



ANGLE GIRTS, the light horizontal between columns, carry siding material.



MILL BUILDING WALLS are corrugated metal, some a single thickness, some an insulated "sandwich"—glass fiber between two layers of corrugated.



CATHODIC PROTECTION of underground piles, pipes and cables is accomplished with grounding beds of steel rods and magnesium anodes.

During construction, contractors took advantage of the fact that the installation of the first layer of corrugated is a separate operation from installing the insulation and outer corrugated. They put the first layer on, then proceeded with other work inside the enclosure. Later, whenever the weather was good or the wall-building men were available, they went back and completed the job.

In the sheet and tin plant there are three areas that have non-sandwich walls. The raw coil storage area and the batch annealing line area have single galvanized corrugated walls. The pickling line area has corrugated metal walls lined with an asphalt and asbestos compound, to resist corrosion by the pickle vapors.

Attachment of the first layer of siding mostly is by "straws,"—long thin rivets that go through the siding and clinch over angle girts. The second layer at most places is attached by self-tapping screws that go through the outer layer and the insulation to screw into the inner layer. As this screw is tightened, the insulation loses its flat shape, conforming to corrugations.

Straws have been used on 2,000,000 sf of siding; self-tapping screws on 1,200,000 sf. In addition, an experimental run was made on both siding types with electric-welded studs. This trial covered 200,000 sf, but production results did not warrant adoption of the method. It was felt that lack of worker familiarity with the method was responsible for the low production.

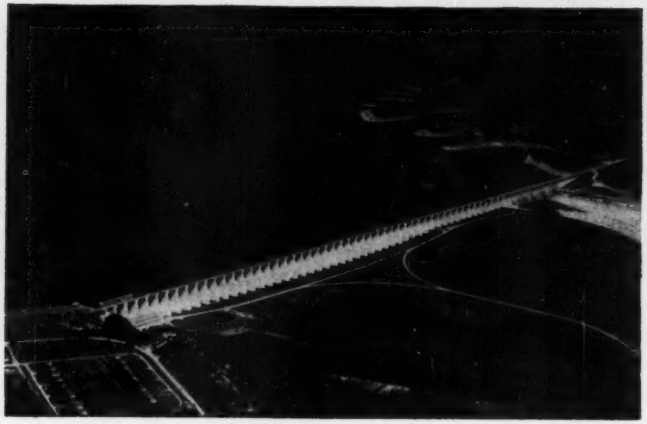
Access to wall work is by hanging scaffold, both inside and out.

• **Special sidings**—While almost all of the siding for Fairless Works is of the type mentioned above, there is to be stainless corrugated on the office building, and a vitrified-enamel corrugated on the central stores building. Superior fire resistance is cited for using vitrified on the storehouse.

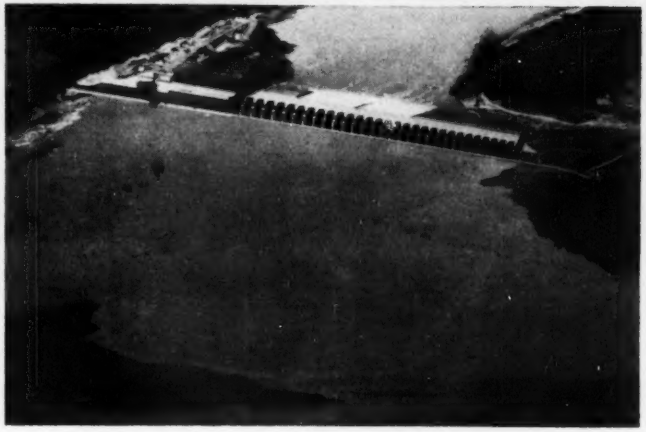
• **Roofs**—Steep roofs also are corrugated metal, but near flat roofs are channel-interlock type, covered with insulation and built-up roofing. Having either two or three channels, the units are tack-welded at joint interlocks and at purlins.

• **Management**—Responsible for getting all construction in shape for on-schedule production are S. Landen, chief engineer, construction engineering bureau, U. S. Steel Co.; Harry S. Spitz, J. R. Brown, and W. J. Leslie, assistant chief engineers. Steve P. Curtis is project construction manager, and M. B. Stiles, H. H. Kelso, R. B. Jordon and J. T. Seamon his assistants.

Grand River flooding cut by controlled discharges . . .



. . . first at Pensacola Dam . . .



. . . and next at Fort Gibson Dam

Colonel E. G. Herb
District Engineer
Tulsa District, Corps of Engineers

Although hundreds of theoretical floods have been passed through the nation's multi-purpose dams in studies of flood-control efficiency, operating experience in actual floods is still very meager. How the release of water from Pensacola and Fort Gibson reservoirs on the Grand River in Oklahoma was handled during last summer's record flood may therefore offer a useful addition to knowledge.

The Grand River (known as the Neosho in Kansas) is a tributary of the Arkansas River, and was subjected to the runoff from the same June and July storms that caused the great flood in the adjacent Kaw River valley in Kansas where damage exceeded that from any other flood in the country's history. Because this latter disaster properly attracted the spotlight, it is not generally appreciated that the Grand River also broke all previous flood flow records. As a matter of fact, its previous peak stages and maximum discharges were topped by greater amounts than was the case for the Kaw.

As shown on the accompanying map of the Grand-Neosho watershed, Pensacola reservoir is about 80 miles and Fort Gibson reservoir about 10 miles above the mouth. Pensacola was completed in 1941 by the Grand River Dam Authority, an agency of the State of Oklahoma, which operates its hydroelectric features, while the available 523,000 acre-ft of flood storage is the responsibility of the Tulsa District of the Corps of Engineers. The Fort Gibson project is still under construction by the Corps of Engineers although the dam, offering 922,000 acre-ft of flood storage, is complete and in operating condition.

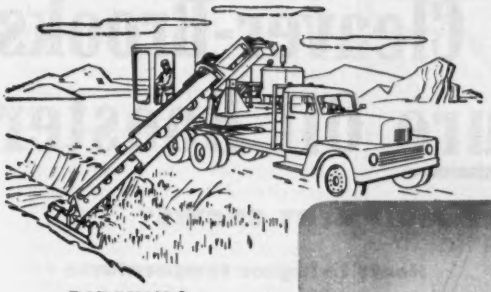
As indicative of the flood that these reservoirs were required to control, these figures for the river just above Miomi, Okla., at the head of the upper reservoir, may be cited. Peak stage 34 ft, compared to a previous record of 25.12 ft; peak flow 267,000 cfs, compared to previous record of 105,000 cfs; and total flood volume 3,450,000 acre-ft in contrast to the previous record of 1,443,000 acre-ft

• **Operating considerations**—The physical features of the two reservoirs and their appurtenant facilities were important considerations in deciding upon operating procedure. Although the Fort Gibson Dam was essentially completed in 1951, it was not ready for large-scale flood-control operations. The construction of the powerhouse and the relocations of the Missouri-Kansas-Texas R.R., the Kansas, Oklahoma, and Gulf R.R., and U. S. Highway 69 were still incomplete. Thus multiple problems were posed. Water stored above elevation 563 would flood the existing Highway 69, and water above 565 would flood the Missouri-Kansas-Texas R.R. In addition, there were several tracts of land above elevation 565 not yet acquired by the government.

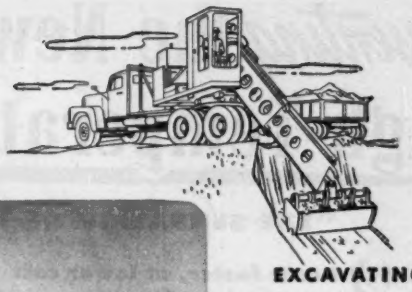
Another factor to be considered was the Arkansas River at and below Muskogee, Okla., which stream was already slightly above bankfull due to floodwaters from other tributaries. In order not to cause additional flooding in the Arkansas River Valley below Muskogee, it was necessary to maintain the gage height at Muskogee at or below 30 ft.

Still another factor was the channel capacity in the reach of the Grand River between the Pensacola Dam and the upper reaches of the Fort Gibson Reservoir. A release of 80,000 cfs from the Pensacola project causes minor damage in this reach of the river, while a release of 100,000 cfs causes relatively larger amounts of damage.

The operators were also faced with the fact that because of the unprecedented stages reached, few data were available to assure accurate predictions as to the effect of valley storage, time of travel, volume of water, and other similar factors.



DITCHING



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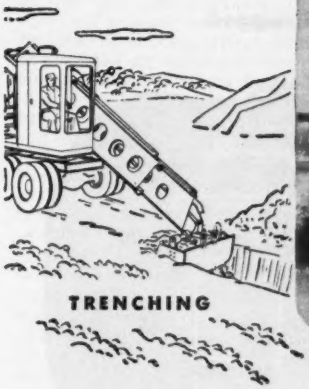

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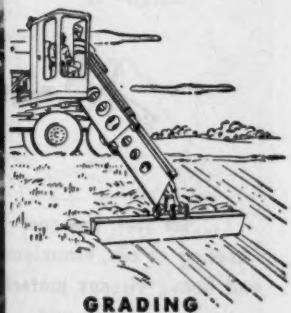
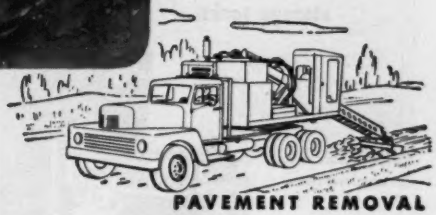


GRADING



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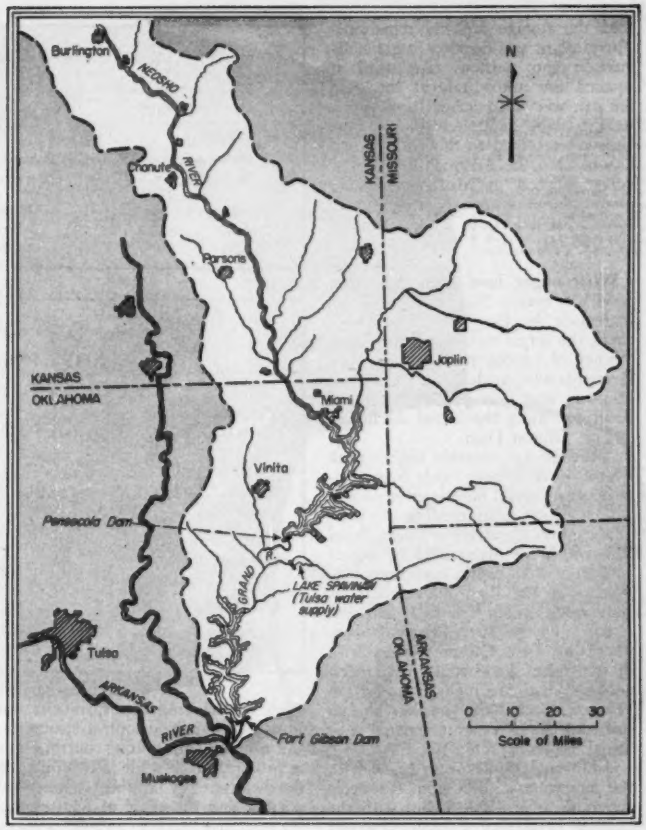
• **Choice of operating method**—On July 10, there were several possible methods of operating the projects for flood-control purposes. One method was to release large quantities of water from the Pensacola Reservoir, causing excessive flooding in the reach of the river between that dam and the upper reaches of the Fort Gibson Reservoir. This course of action included holding releases from Fort Gibson to rates that would not cause any major flooding of the Arkansas River. This combined operation would, however, have the effect of causing a longer duration of flooding between the two projects, with corresponding crop damage. Another consideration, of course, was the possible flooding of the Missouri-Kansas-Texas R.R. and Highway 69, the only north-south arteries of travel and transportation still open in the area. In addition, certain utilities and land not yet acquired by the government would have been flooded.

A second method was to release large quantities of water from Pensacola (as in the first method) but also to release sufficient amounts from the Fort Gibson Reservoir to hold the elevation of water in that reservoir below 563, thus eliminating flooding of the railroad, highway, utilities and private land. However, such an operation involved consideration of the overtopping of a cofferdam protecting the powerhouse area below the dam in addition to the excessive damage in the Muskogee area and on the main stem of the Arkansas River below that city.

In both the first and second methods, Pensacola releases would have been regulated to utilize full flood-control storage in that reservoir.

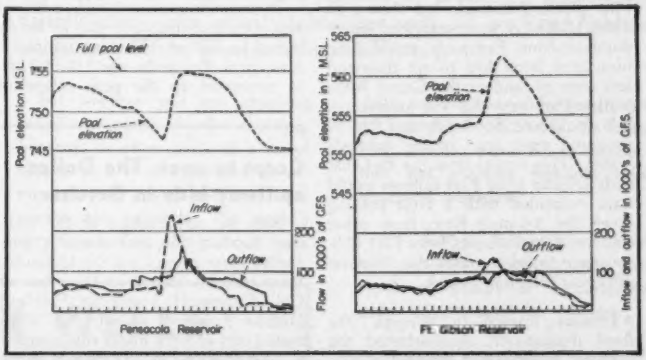
A third method was to attempt to contain the floodwaters, which exceeded non-damaging releases, in both the Pensacola and Fort Gibson Reservoirs. Beneficial aspects of this move were the possibility of controlling the high crests in their entirety by the use of the two reservoirs, as against the possibility that if such action would not suffice, larger releases would have to be made from both projects subsequently.

The method of operation chosen was based primarily on this third method, although it also included some parts of the first two. As Pensacola had been almost filled by the rains that occurred in Kansas during the first two storm periods of June 20 to July 4, and since it was known that heavy rains were continuing in the upper valley, it was decided early on July 11 to increase the outflow from Pensacola from 60,000 to 80,000 cfs, and also to use the incompleted Fort Gibson Reservoir for flood-control purposes. By the increased release the Pensacola pool was lowered sufficiently to make 450,000 acre-ft of flood-control storage available for containing the runoff from the final and major phase of the flood.



WATERSHED of the Grand (Neosho) River where flood control by reservoirs received a major test.

On July 15, it was decided to increase the releases from Pensacola to 88,000 cfs, but on July 16, it was determined that, even with this discharge, the inflow into the reservoir would ex-



OPERATION HYDROGRAPHS for Pensacola and Fort Gibson reservoirs show how levels were manipulated during floods of July, 1951.

ceed the storage capacity remaining. Therefore, it was decided to gradually increase the outflow rate until it equaled the inflow rate at the time the reservoir had reached its capacity. At the same time, releases at Fort Gibson were held to the point necessary to keep the Arkansas River at or below 30 feet at Muskogee, which produced an outflow rate ranging from around 70,000 cfs to a maximum of 107,000 cfs.

• **What might have been**—After the flood was over a "hindsight" analysis was made by the Tulsa District to check the actual method of operation. Studies of various release rates from Pensacola were made to determine the resulting stages in the Fort Gibson Reservoir, using the actual discharges at Fort Gibson Dam.

Although considerably higher peak releases were actually made from Pensacola than would have been necessary with high releases preceding the peak inflow, lower elevations of Fort Gibson Reservoir were maintained by actual operations than would have been possible with the high releases earlier. This results from the fact that the actual discharges from Pensacola were stored in Fort Gibson Reservoir a shorter time than would have been necessary had the high releases from Pensacola been started earlier. The results of the studies are compared with actual results in Table I.

Additional studies were made with the same release rates from Pensacola Reservoir as in Table I, but with the outflow from Fort Gibson Reservoir regulated so as not to exceed a maximum pool elevation of 562.47 in that reservoir which was obtained in the actual operation.

The merits of the actual operation from the standpoint of area flooded between Pensacola Dam and Fort Gibson Reservoir and on the Arkansas River from Muskogee, Oklahoma, to Pine Bluff, Arkansas, are shown in Table II. Thus a lesser release of longer duration from Pensacola would have inundated from five to six thousand less acres of land in the Grand River Valley (between the two reservoirs), but would have flooded from 25 to 69 thousand more acres in the Arkansas Valley. This results from the fact that early releases from Fort Gibson would have coincided with a crest coming down the Arkansas River from other sources. Actual releases from Fort Gibson were timed to reach the Arkansas after this crest had passed.

• **Lessons learned**—In general, the flood dramatically demonstrated the need for a continuing educational program to keep the public informed as to the operation of flood-control reservoirs, emphasizing the capabilities and limitations of flood-control structures; the need to empty flood-control pools as promptly as possible after storage of floodwaters; the limiting channel capacities and the effect of release rates on marginal flooding and the sources of information available to the public, not only in Corps of Engineers offices, but also in other public agencies. Of particular interest to engineers is the way in which this flood points up the limitations of data based on the relatively short period (seldom over 40 years) of complete records in this general area.

In summation, the actual results of this combined operation may be briefly stated as follows: The maximum release from Pensacola was 156,000 cfs, as compared to the peak inflow of 257,000 cfs. The duration of this peak was only about four hours, thus showing an appreciable reduction in the extent and duration of flooding in the reach of the river between Pensacola Dam and Fort Gibson Reservoir. How closely these operations were coordinated can be seen from the fact that the Fort Gibson Reservoir pool came within about six inches of flooding Highway 69. Also attributable to the success of the operation was the fact that Arkansas River stages downstream from Muskogee were held so as to prevent any additional flood damage on that river.

The operation of the two reservoirs prevented an estimated $3,943,000 in damages on the Grand River in Oklahoma and the Arkansas River in Oklahoma and Arkansas.

Table II

Lands Inundated by Various Operational Procedures

(Fort Gibson Reservoir Stage Held at or Below Elevation 562.47)

Pensacola Release Rates (cfs)	Land Inundated (acres) Grand River between Pensacola Dam and Fort Gibson Reservoir	Arkansas River between Muskogee, Oklahoma, and Pine Bluff, Arkansas
156,000 (actual)	6,700	72,400
102,000	500	96,900
110,000	1,600	141,200

Table I

Comparison of Various Operational Procedures

(For Gibson Releases Held to a Maximum of 107,000 cfs)

Pensacola Release Rates (cfs)	Resulting Pool Stage in Fort Gibson Reservoir (feet, m.s.l.)	Facilities adversely affected
156,000 (actual)	562.47	K.O. & G. R.R. flooded*
102,000	563.86	K.O. & G. R.R. flooded* U.S. Highway 69 flooded M-K-T Railroad ballast flooded
110,000	567.77	K.O. & G. R.R. flooded* U.S. Highway 69 flooded M-K-T Railroad flooded

*K.O. & G. R.R. was already out of service due to bridge washout and flooding at other points.

Corps to open The Dalles spillway bids in October

Bids for construction of the spillway dam in the government's The Dalles Dam project on the Columbia River will be opened in the office of Col. Thomas H. Lipscomb, Portland District Engineer on Oct. 7. Estimated cost of work under this contract is $15 million. Cost of the entire project, with 14 generators installed, is estimated at $350 million.

First contract for construction work on the project was let last January to S. A. Healy Co., White Plains, N. Y. It was for cofferdam excavation for the powerhouse. The cofferdam has been completed and the excavation specified in the $4.9-million contract is underway.

Plans of the Corps of Engineers call for first delivery of power in November, 1957, and completion of all units in 1960. Six years will be required to complete the major structure.

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Precast girders support long-span roof

PRECAST CONCRETE GIRDERS—ten of them 58 ft long and eight 52 ft—are being used for the roof framing of the auditorium and gymnasium in a New York City elementary school.

Precast construction was chosen for the reinforced concrete structure only after detailed analysis of four competing types of framing. Now that all costs are in, Roger Starr of Starr & Pinter, Inc., subcontractor for the girders, is convinced that precast concrete girders were cheaper than any other equally permanent and fire-resistant method of construction. Total cost of the girders in place is $11.60 per lin ft.

The decision to use precasting had its beginning when the New York City Board of Education began employing reinforced concrete framing in some instances instead of structural steel because of uncertain steel supplies. Designers, both city-employed and private, succeeded in saving an average of 500 tons of steel per school. But one problem that arose with concrete construction was the high cost of long-span cast-in-place beams and girders, such as those necessary over assembly halls and gyms.

• **Analyze four roof systems**—So when the consulting engineers, Fraioli, Blum & Yesselman, came to design P.S. 199 in the borough of Queens, they carefully analyzed the four types of framing shown on the accompanying drawing.

The gymnasium was to be 58 ft wide and 72 ft long, while the auditorium dimensions were 52x110 ft. Regardless of which framing system was chosen, it was decided to use a cast-in-place roof slab to attain a monolithic structure. There was also to be a hung ceiling.

By far the most expensive framing, according to estimates, was cast-in-place concrete. Forming and shoring costs would be excessively high. Next most expensive appeared to be rolled steel beams which, in addition, were hard to obtain at the time.

That left the decision to a choice between open-web steel joists and precast girders. Although cost of each system appeared about equal, the Board of Education and the engineers chose precast girders because of their higher fire resistance, greater durability, lower maintenance costs and ability to produce a monolithic structure.

Comparative costs of all four framing systems are given in the accompanying chart. They were estimated by George Pinter, member of the subcontracting firm, which proposed the precast system.

Another factor favoring precast girders over steel joists on this job was the necessity of supporting one column of an adjacent 3-story classroom wing on the gymnasium roof. The New York City code requires that the supporting girder be individually encased in concrete.

• **Girder design**—Live, slab, roofing and ceiling loads totaled 101 psf, or 808 lb per ft of girders. These members are spaced 8 ft on centers. Add 300 lb per ft of girder weight, and the total design load comes to 1,108 lb per ft.

The girders, of modified I-section, are designed to carry—in addition to their own weight, and that of the slab—one-half the live load before the roof slab has set. The slab forms provide lateral bracing, and when the slab has set, it will constitute the flange of a T-section—of which the girder is the web—capable of supporting the entire roof and ceiling load.

As indicated in the accompanying drawing, the girders are 3 ft 6 in. deep. Flanges are 12 in. wide and 6½ in. thick. The web is 5 in. thick. Openings 13x17 in. are provided in the webs of the longer girders for ductwork to pass through. About 0.9 tons of reinforcing bars are in the longer girders, 0.6 tons in the shorter. Dowels

and shear keys are provided to transfer stresses between slab and girders.

• **Precasting**—Because of space limitations at the site and the recurrent need for lifting equipment, the girders were poured in a precasting yard about 5 miles from the job. The forms were made up of 2x4-ft plastic-lined plywood panels held in an iron framework. With only slight modification, they were used for both the 52- and 58-ft girders.

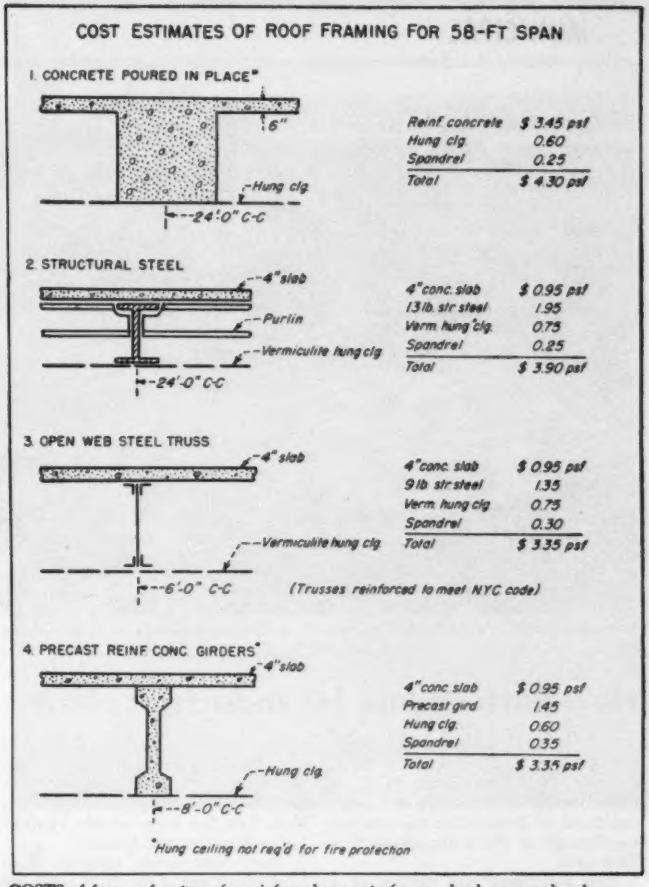
Cages of reinforcing were fabricated by the supplier and set into the form. Concrete was poured from a bucket transported by a lift truck. It took one hour to fill each girder with about 5 cu yd of concrete and vibrate it thoroughly. Forms were stripped the morning after casting—about 16 hours later. The girders could be moved from the casting floor when three days old by means of lifting hooks.

Though the girders were designed for a 3,000-psi concrete, the 2-in.-slump mix used averaged 5500 psi at 28 days. It was made with 8 sacks of cement per cu yd and an expanded slag lightweight aggregate.

• **Erection**—Starr & Pinter also put the girders in place, employing a steel erection gang. The 8- and 9-ton concrete sections were handled easily by a crawler crane with 100-ft boom.

The erection crew consisted of four men and a foreman. The first of the girders was erected at 2:30 pm on Aug. 14. The last of the eighteen was set in place by 10:30 am the following day. Average time for erection was 20 min, including the time spent in moving the crane and waiting for the girders to arrive.

Transporting the girders to the site was a little tricky, especially in New York City traffic. Unlike steel girders, these concrete sections cannot be handled in any position, but must rest on the bottom flange. Special elongations of 45-ft trailers enabled the girders to be supported throughout their entire length.

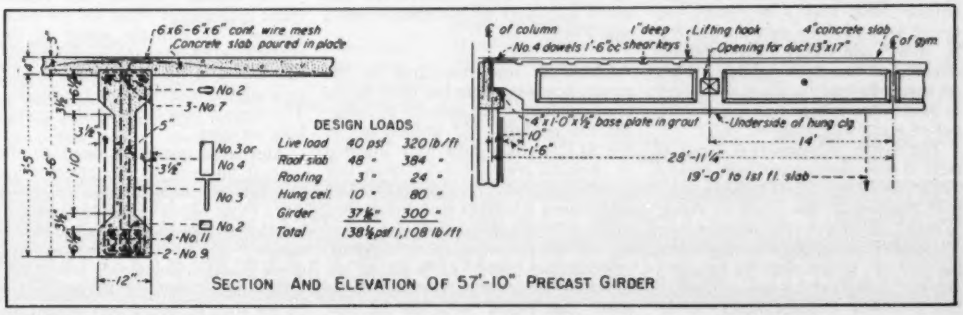


COSTS of four roof systems for reinforced concrete frame school were analyzed.

Trailer bodies were extended with 12x12-in. steel beams 30 ft long, which were bridged at 3-ft intervals with 4x4's. Two precast girders were set on the bridging and chained in position.

Psaty & Fuhrman are general contractors for the school. Knappe & Johnson are the architects.

John P. Riley is coordinator of construction for the Board, Michael L. Radoslovich, chief architect, William H. Correale, chief engineer, and Walter V. Walsh, construction manager.



TYPICAL details of 58-ft concrete girders. All were precast at central yard then trucked to site 5 miles distant.

MUSHROOMING INDUSTRY in New York City area spreads to Jersey side of Hudson River. Spires of Manhattan are in background. (Photo by Skyviews, New York)

New pattern laid for industrial plants

A huge new industrial concentration west of the Hudson River from Paterson, N. J., to Linden, N. J., is mushrooming as the result of a post-war trend to decentralize manufacturing throughout the metropolitan New York area.

This conclusion was reached in a twelve month study released recently by the Regional Plan Association of New York. The study encompassed 2658 new plants built in the region between 1946 and 1951 and estimated in value at over $177 million.

"These many hundreds of new plants showing the continued vitality of our region were constructed largely outside New York City, which obtained only 22% by number and 8% by value," said Henry Fagin, planning director of the RPA, adding, "Only 54 new industrial buildings were built in Manhattan between 1946 and 1951, out of a city-wide total of 593."

The survey indicates that 5 out of every 6 new plants were built beyond the limits of the major industrial districts existing at the close of World War II. Furthermore, it shows an apparent trend for those central counties which dominated the region's manufacturing in the past (Manhattan, Brooklyn, Hudson, Essex) to decline in relative importance while a number of outer counties are rising in manufacturing status (Union, Middlesex, Bergen, Fairfield, Nassau, Passaic). The major growth within New York City has been outside Manhattan in Brooklyn and Queens.

"Five New Jersey counties (with 1135 plants out of the 2658 total) led in new plant construction. Union County with 277 new plants valued at $25 million setting the pace both in numbers and in value. Nevertheless, Kings and Queens counties in New York together accounted for 456 new plants with a value of over $23 million, much of this new industrial development being concentrated just north and south of Newtown Creek", said Fagin.

• **Chemicals lead**—According to the survey, however, there has been an uneven emphasis from industry to industry. For example, $31 million out of the $177 million total were invested in chemical plants, but less than half a million in rubber and virtually none in tobacco. The different specific industrial types also were distributed among the various counties unevenly.

While the center of the region has continued to exert a powerful influence," said Fagin, "with half the new plants locating within 15 mi of downtown Manhattan and three-quarters within 20 mi, there is mounting evidence that the century old pattern of everyone working 'downtown' and living elsewhere is fast changing. Many kinds of industrial activity are seeking and finding suburban locations where hitherto only residential development was anticipated."

• **New pattern**—Two kinds of urban pattern appear to be developing simultaneously:

• First, extensive industrial districts on low, flat lands unsuited for residential purposes and manned by employees journeying along express highways from residential communities located in the more desirable uplands.

• Second, the scattered clusters of new plants finding dispersed locations out in areas that also are desirable for residential development. These plants are affording an increased opportunity for persons to live close to their jobs.

"Our metropolitan pattern now can be seen as a composite of these two differing ways of relating place of work to place of residence," said Fagin.

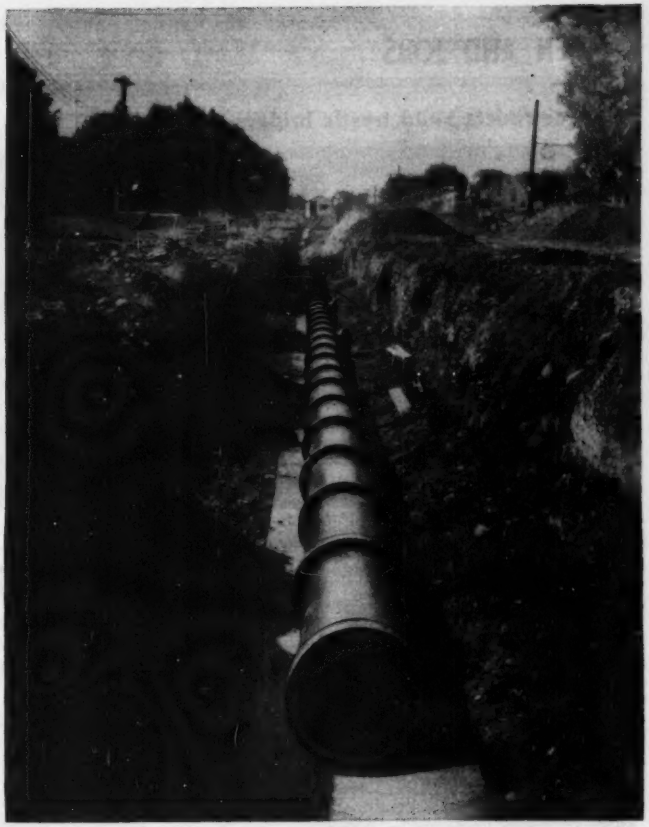
The survey, made with the cooperation of the New Jersey and New York State Departments of Labor, the Connecticut State Development Commission and the New York City Department of Buildings, covered all factory plans approved in the Metropolitan Region between 1946 and 1951. It was prepared under the direction of Henry Fagin with the advice of Frederick P. Clark, consultant to the RPA.

Fluoridation delayed by lack of authorization

Flouridation at Milwaukee, Wis., has been delayed at least until September by failure of the Common Council to authorize an immediate start on the program.

The council's utilities and health-traffic committees voted for the fluoridation 7-3. But the report of the committees favoring the resolution carried only 4 of the 6 signatures needed to bring the matter before the council. The council now has started a month-long vacation.

Answering questions raised by the council, an assistant city attorney has told the body that fluoridation of the city's water would not violate any contracts that the city has undertaken to supply water to suburbs, private concerns or individuals and would not make the city subject to prosecution by the state or federal government under pure food laws.



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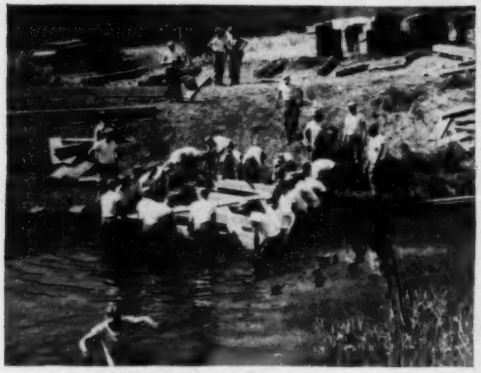
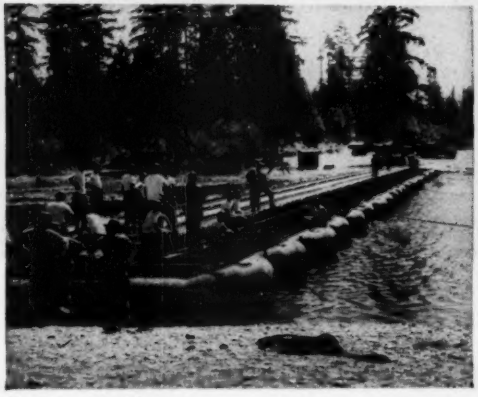
Engineer cadets build trestle bridges . . . .



11 AM FIRST BENT or student built bridge goes up.

3 PM DECK SYSTEM takes shape with timbers log-rolled in place.

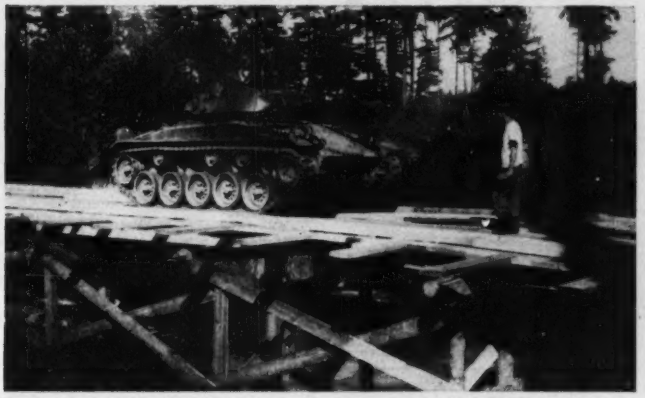


floating bridges . . . .

and Bailey bridges,

use air-powered saws . . . .

and drive bulldozers.



5 PM TANK TESTS bridge under watchful eye of student platoon leader.

Summer camp is high point in Engineer cadet training

Some 1,040 of this year's engineering college graduates will be commissioned as officers in the Corps of Engineers, Department of the Army.

These men represent a sizeable portion of the currently short supply of engineering graduates—and ENGINEERING NEWS-RECORD thought it worthwhile to study the program and to evaluate the scope of the training work and its relationship to the construction industry.

The study centered around the six-week summer camp at Ft. Lewis, Wash., completed early in August—the highlight of the four-year program of Reserve Officers Training Corps study. A similar summer camp was held at Ft. Belvoir, Va., for students from colleges in the eastern half of the United States.

The 1,040 ROTC-trained men represent only part of the 2,300 new Corps of Engineers officers to be obtained in 1952. Others will come from these sources: U. S. Military Academy—55; Officers Candidate School—1,155; and direct commission—50. These sources are not as competitive with the needs of the construction industry as is the commissioning of new college graduates, since most of the men involved are already committed to military service and thus not available anyway.

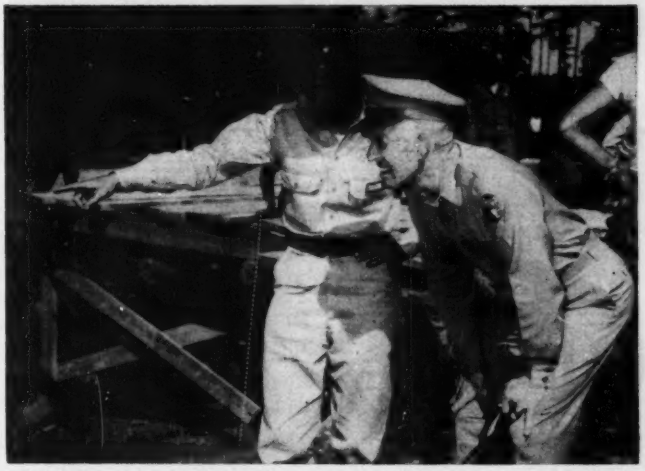
Industry will benefit from the training given ROTC men, since many will be released to inactive duty after their term of service better equipped for civilian jobs.

The 2,300 new officers are needed to enable the Corps of Engineers to fulfill the military and civil functions assigned it. They will be used mostly in military billets, initially to a large measure on overseas assignments. Such service permits assignment of more experienced officers to civil works duties. The 2,300 total is about 8% of the new officers being commissioned by the Department of the Army this year.

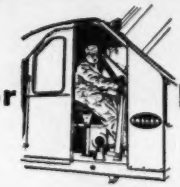
• **Training starts in college**—Military training of the ROTC officers started with college enrollment. Land grant colleges through long-standing Federal law require 2 years of basic ROTC work. But advanced ROTC—junior and senior years—is optional. At many other schools, the entire program is optional. The students select such work because of the training it involves and because it assures military service at officer rather than recruit level.

In general, basic ROTC work involves three hours of class time a week and advanced ROTC work five hours a week. In each case, one hour is drill. Introduction to Corps of Engineers work starts in the sophomore year.

The technical portions of training are emphasized in the last two years. This includes bridge design and classification, military roads and runways, water supply, and many other military applications of technical subjects. There is good correlation of academic and military subjects. For example, the consideration of bridges is intended to come after the student has had a college course on strength of materials. Thus, engineering principles are applied to practical subjects at an early stage in a student's technical career.



BOSSES of Fort Lewis bridge building session are Company C. O. Maj. V. D. Wood and Battalion C. O. Lt. Col. J. D. Strong. Wood and Strong are assigned to the Universities of Washington and California. (ENR photos by Wise)

The INSLEY operator  **knows..**

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MEN AND JOBS

Highlight of the 4-year ROTC program is the six week summer camp attended between the junior and senior years. This is the first and only real taste of Army life a student gets before receiving a second lieutenant's commission. It emphasizes still more practical applications of technical subjects.

This year's Corps of Engineers summer camps were attended by more than 1,400 students—some 1,000 at Ft. Belvoir and 429 at Ft. Lewis. The West Coast camp included men from Colorado and Missouri School of Mines, Iowa and Oregon State Colleges and the Universities of California, Colorado and Wisconsin. In all, 27 schools were represented.

Colleges from all other areas sent students to Ft. Belvoir.

Faculty for the Ft. Lewis camp was made up of 29 Corps of Engineers officers and additional non-commissioned specialists assigned to the ROTC program in the 5th and 6th Army areas. Support in the form of equipment with operators, demonstration platoons, and the like came from the regular 34th Engineer Combat Battalion stationed at Ft. Lewis.

Subject matter at the camps includes military training as well as practical applications of technical subjects. More time is spent on weapons than any other single thing. Next from a time standpoint is the actual building of military bridges. The cadets build four: Two floating bridges, a Bailey bridge and a wooden trestle bridge. In these exercises they organize and carry out the work under their own leadership—a large order for college students.

Much time is also spent on mechanical equipment: bulldozers, motor patrols, rollers, cranes, and other units a combat engineer operates.

• **Some career officers**—Some ROTC-trained officers make a lifetime career of Corps of Engineer service. All are required to serve two years on active service in times of emergency—such as now. And they must serve a minimum of eight years in the reserve—longer if active participation is maintained.

Here's how the career officers are selected: About 25% of the graduates are rated as Distinguished Military Graduates (DMG). After a study of the needs of the Army and a study of the potentialities of the graduates, a number of them are offered Regular Army commissions. The percentage becoming careerists is small, but the number is usually in excess of the new Corps of Engineers officers from West Point.

(*Men and Jobs continued on p. 50*)

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A MONTH IN THE FIELD was a "vacation" for Clifford S. Strike, president of F. H. McGraw Co. Strike took over when F. J. Mayo, project manager, vacationed.

Executive 'vacations' in the field

Dick Harwood
Staff Correspondent

Clifford Stewart Strike is dedicated to the proposition that the shortest distance between two points is any route that can be covered in double time.

Strike has been double-timing since the first day of January, 1951, when he set out to fulfill—on schedule—the biggest government contract ever awarded to a U. S. contractor up to that date.

His formula seems to work because today, after 19 months and 54 work stoppages, the $500-million uranium-separation plant at Paducah, Ky., is substantially on the tight schedule set by the Atomic Energy Commission.

Nothing less than a double-time operation would have made this possible. Labor disputes have resulted in 2,166,811 lost man-hours, but by pushing and driving day and night, Strike has overcome this handicap.

That is why he didn't lose any sleep when A.E.C. on July 21 awarded F. H. McGraw & Co. a supplemental $459 million contract to expand the Paducah project.

From July 14 to Aug. 8, Strike personally supervised the big job. As McGraw's president and top executive he's chair-bound for 11 months out of the year. His opportunities to get out into the field with his construction crews are limited. So it was a kind of vacation for Strike to take over last month when his project manager, F. J. Mayo, left for a 30-day rest. Strike went back to McGraw's central offices in Hartford, Conn., on August 8 when Mayo returned.

• **Vacation**—Until then, Strike was in his element. He was out of bed at the crack of dawn, tossing down a construction man's breakfast and heading for the 5,000 acre job site, 15 mi from Paducah.

Strike doesn't look like a businessman who landed a plum. Instead, he has the appearance and air of an engineer who has taken a great personal pride in the challenge of a job that some men would back away from with relief.

To the 49-year-old Strike, with 29 years of engineering behind him, this project is the fulfillment of a construction dream.

"It seems," he said, "as if I've been planning all my life to do this job."

• **Steps up**—His apprenticeship started in the early 1920's when, as a college boy, he took a summer vacation job in the Midwest as a construction flunky for Henry L. Doherty Co. Later—in 1924—he got a mechanical engineering degree from the University of Illinois and went to work at $25-a-week

(*Continued on page 54*)

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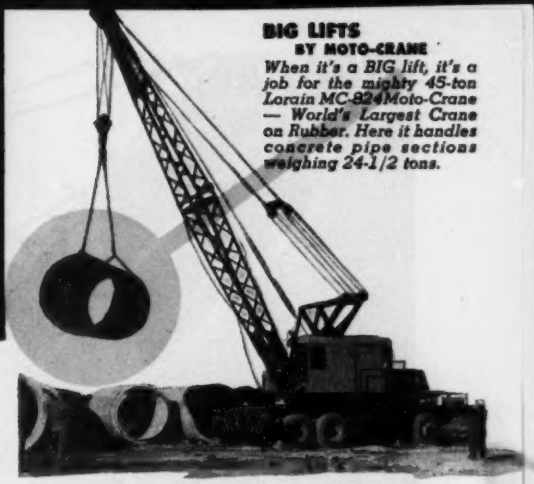
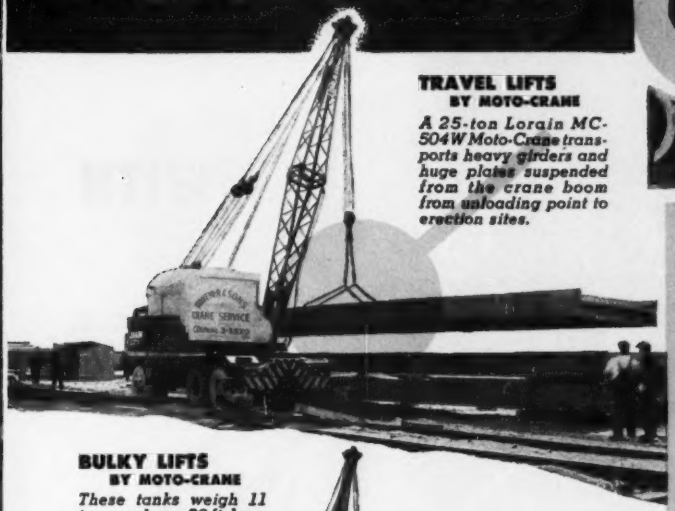


BIG LIFTS
BY MOTO-CRANE

When it's a BIG lift, it's a job for the mighty 45-ton Lorain MC-824 Moto-Crane — World's Largest Crane on Rubber. Here it handles concrete pipe sections weighing 24-1/2 tons.



TRAVEL LIFTS
BY MOTO-CRANE

A 25-ton Lorain MC-504W Moto-Crane transports heavy girders and huge plates suspended from the crane boom from unloading point to erection sites.

Whenever and wherever there's a load to lift, there's a mobile, high-speed Lorain Moto-Crane to do the job . . . and lower costs! From 10-ton lifting capacity up to the giant 45-ton MC-824 (world's largest crane on rubber) . . . you'll find more sizes, more drive arrangements, more *selection* in the Lorain line of Moto-Cranes. And there's more *value* in Lorain Moto-Cranes . . . with carriers and turntables *designed for each other* by the pioneer of the truck-crane idea. That's why more Moto-Cranes are on more jobs today . . . and why it's so easy for your Thew-Lorain Distributor to show you proof on a nearby job. Ask him for job proof — before you buy!

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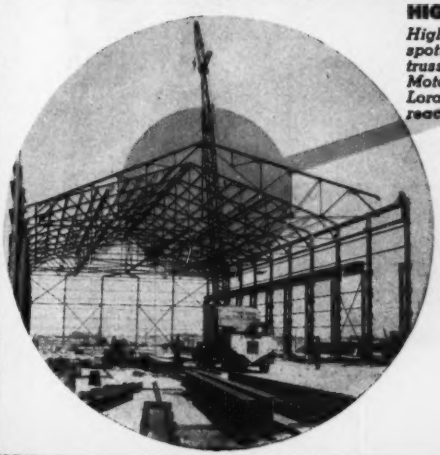
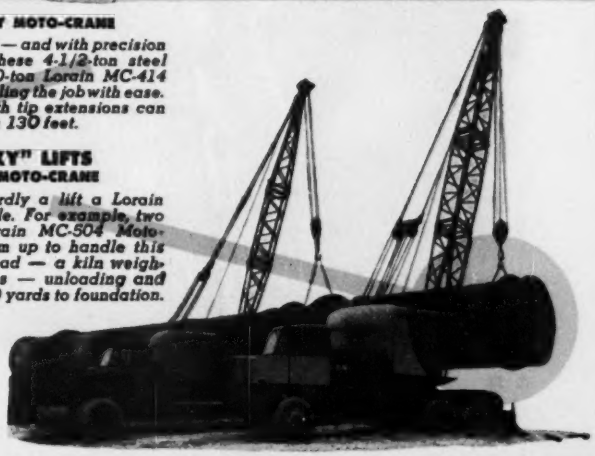
HIGH LIFTS BY MOTO-CRANE

High up in the air — and with precision spotting — go these 4-1/2-ton steel trusses with a 20-ton Lorain MC-414 Moto-Crane handling the job with ease. Lorain booms with tip extensions can reach as high as 130 feet.



"TRICKY" LIFTS
BY MOTO-CRANE

There's hardly a lift a Lorain can't handle. For example, two 25-ton Lorain MC-504 Moto-Cranes team up to handle this awkward load — a kiln weighing 80 tons — unloading and moving 100 yards to foundation.



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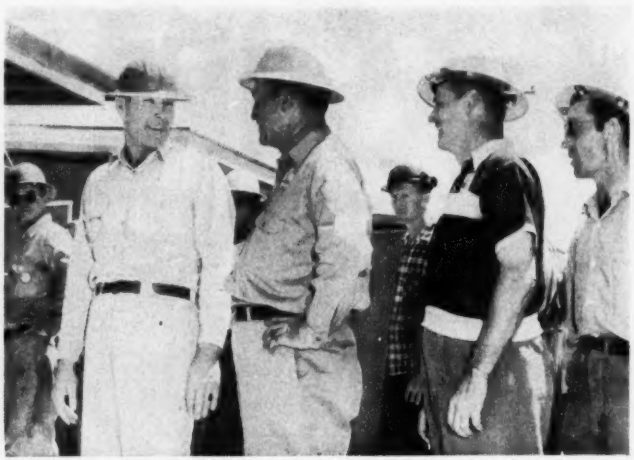


WAITING IN LINE at a field canteen for his sandwich lunch, Strike swaps stories with Al Little, McGraw field foreman (in front) and Frank DeSetti, an area super.

for Dwight P. Robinson & Co., of New York City.

He held down a desk job for Robinson until F. H. McGraw, the company's construction manager, popped into Strike's office one day, stuck a train ticket in his hand, and sent him to a distant city as an instrument man.

Later McGraw and Strike teamed up to form F. H. McGraw & Co. Strike, at 29, was named assistant vice president and he stuck with McGraw through the tough depression years. The company weathered the storm.

When World War II came along, they were in line for government business. They built the $31 million Jayhawk Ordinance Works at Baxter Springs, Kansas; the $36 million Bermuda Naval Air Base; a $17 million aluminum rolling mill for Reynolds Metals Co. in Alabama (completed in five months); and the Welland Chemical Co. ammunition project near Niagara Falls.

After the war F. H. McGraw & Co., took on the $30-million Coosa River Newsprint plant in Alabama and built a sugar mill for Canada & Dominion Sugar Company of Montreal. Later they built one of the largest coal plants in the U. S. for the Jones and Laughlin Steel Corporation.

By this time Strike was president of the McGraw firm and he had enough experience behind him to confidently take on the job at Paducah.

• **Field day**—At Paducah, Strike's work day started at 8 a. m. with a series of rapid-fire conferences with department heads who gave a detailed account of their work during the previous 24 hours. Then he called in his job supervisors and sketched out the next day's assignments. These sessions took place in Strike's bare, built-for-work office that has only one "luxury"—an air-conditioning unit.

By mid-morning Strike was in the field. He shuttled from one area to another in a dust-caked sedan, equipped with a radio-telephone.

His uniform was khakis, field boots and hard-hat. He's stocky, built like a truck-driver, and he looks like a construction foreman of the old school. A cigar completes the Strike profile.

Late in the afternoon he hustled back to the office to clean up the day's paper work and hold a final conference with administrative heads.

It's not easy to run a project with 23,000 people to handle, a weekly payroll of $2.5 million and constant reports to file with AEC.

• **Shop talk**—At light, Strike frequently had old cronies in to cook dinner and play cards, in the 3-bedroom, ranch-style house which the company built for Mayo.

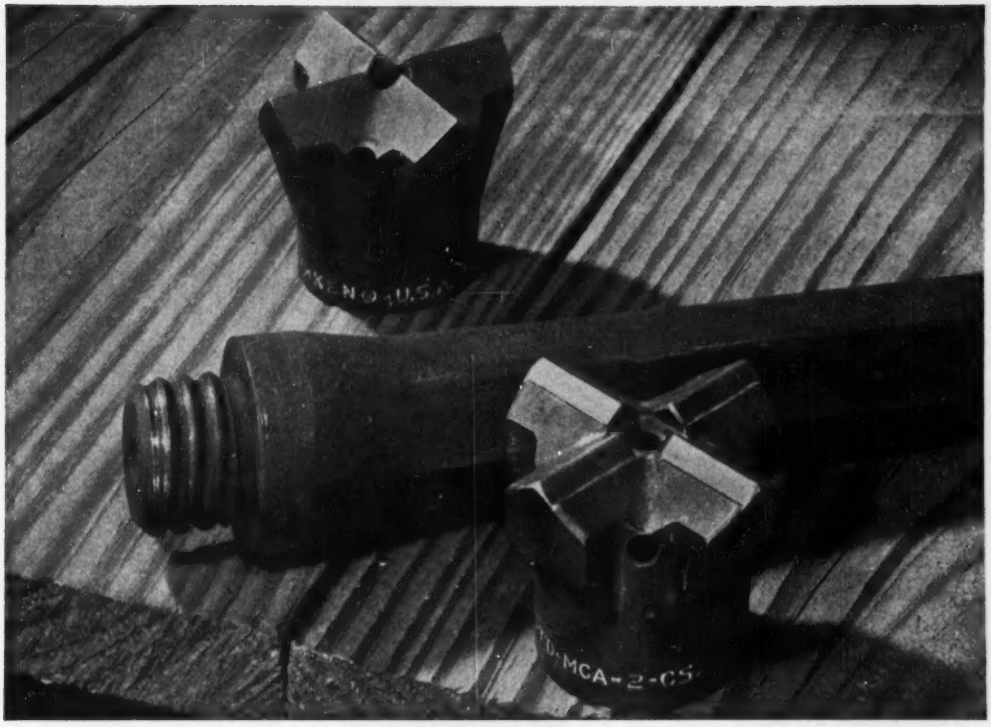
"I try to keep it social, but it always ends up as a shop talk session," he said.

Labor trouble haunted the job from the start. Jurisdictional disputes and other squabbles caused 54 stoppages.

But Strike is now convinced that the labor situation is stabilizing.

"The strikes last year hurt us badly," he said, "but the labor prob-

(*Continued on p. 56*)



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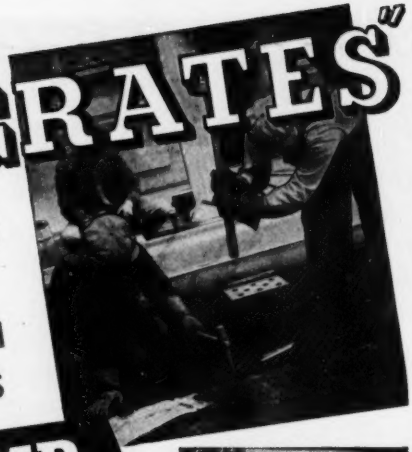

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lem is gradually working itself out and I think we're down to average so far as stoppages go. There is a completely new attitude among the labor leaders today as compared with a year ago. This is partly because the union leaders are more experienced now and partly because we've been living together long enough to get to know each other."

"Fred (Fred J. Mayo) has played a big part in it, too," he said.

Two significant policy changes have contributed to better labor relations.

First, is a new grievance procedure recently put in effect; second, is the recent policy decision by 19 A.F.L. building trades leaders banning walkouts over jurisdictional disputes.

Strike's biggest problems right now are keeping to the "very tight schedule" which A.E.C. has called for and maintaining a balanced labor force.

He needs 2,000 to 3,000 more skilled workers. He also needs competent workers in the various mechanical trades.

• **Money and experience**—Nevertheless, things look good for McGraw. Strike said 1953 promises to be one of the best, if not the best year, profitwise, that McGraw has seen since 1948 when they netted $1.8 million.

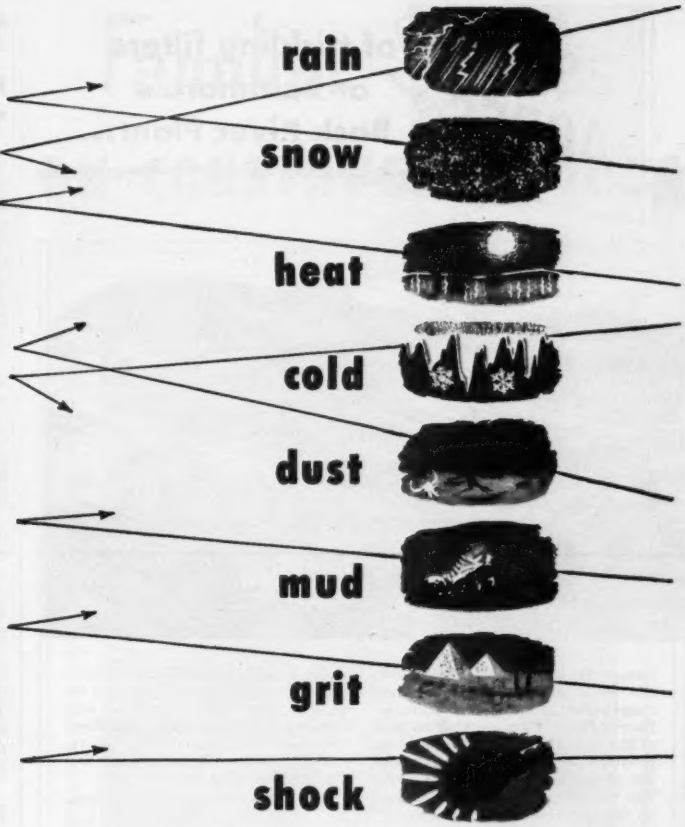
Exactly what the firm will make on this job has never been made public. It is a cost-plus-fixed-fee arrangement and the best guesses are that McGraw's fee will be $3 million.

Strike says with complete sincerity that the experiences gained from this A-plant job are just as important to him as the profits.

"This is the kind of job," he said, "that a contractor ought to do if he ever gets the chance. He's certain to gain experience that will be helpful for all time, particularly in administration and co-ordination of effort and materials. Another plus-value of this project, like others we've been on, is that it is bound to bring out new talent, new men that will stay with us after the job is done and who will take over after we've gone."

Back at Hartford, Strike continues to spend from one-quarter to half his time mulling over and working on the Paducah job. The rest of the time he gives to McGraw's other current projects which include a $3.5-million sewage treatment plant in Providence, R. I., a $3-million housing project in Hartford; a $1-million institutional building job in Connecicut; and a $1-million contract for moving a plant of Standard Railway Equipment from Kensington, Pa., to Hamond, Ind.

(*Men and Jobs continued on p. 58*)



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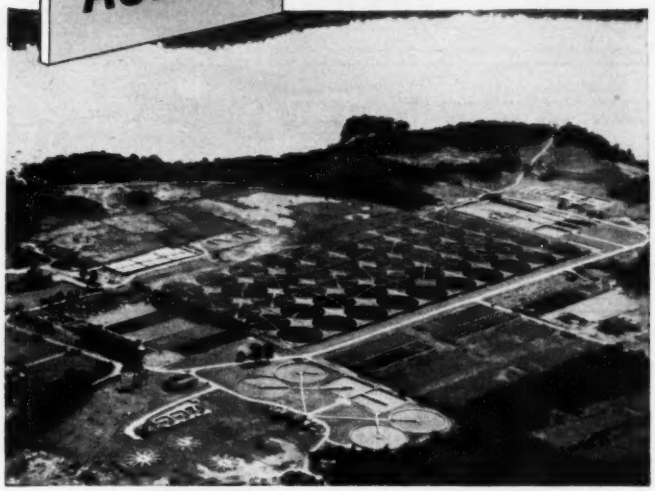

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MEN AND JOBS

Highway pioneer retires; was 46 years at Illinois

Carroll C. Wiley, member of the civil engineering faculty of the University of Illinois, will retire Sept. 1. He has been a member of the staff since 1906.

He was graduated from the Illinois civil engineering department in 1904, and then spent the next two years in private industry, working for the Lorain Steel Co. and the American Bridge Co.

Wiley's first work, upon returning to the University of Illinois campus was in railroad engineering.

Wiley was president at the dawn of the all-weather highway era in Illinois and the Midwest. He pioneered highway improvements which, at that time, were called fantastic.

He served for 35 years as Director of the Illinois Highway Conference, one of the first in the nation. Wiley was called to many communities and states to aid in solving highway problems as automobiles became more popular.

Wiley frequently said that America, in her highway and street and parking developments, was still in the Model-T era, and that only one driver in fifty knew how to use the brakes on his car. He served on numerous state highway safety committees.

High public works post for career civil engineer

E. Burton Hughes, director of the Bureau of Rights of Way and Claims in the New York State Department of Public Works since 1949, and since May 1, 1952, director of Rights of Way and Claims for the New York State Thruway Authority, was appointed last week as deputy superintendent of public works. He succeeds Fred W. Fisch.

Hughes has been in state service for almost 24 years, having begun in 1925 as a junior civil engineer in the Bureau of Bridges and Grade Crossings.

During World War II he was commissioned a Captain and assigned to the Division Engineer's Office, Corps of Engineers at Baltimore, Maryland, as assistant chief of the Real Estate Division. He was later promoted to Major.

Hughes returned to state service as assistant director of the Bureau of Rights of Way and Claims in 1945.

He is a native of Troy and received his education in the schools of that city. He was graduated from Rensselaer Polytechnic Institute.

Careers . . .

• **Appointed**—**Joseph T. Lyons** has been named director of the Federal Housing Administration's Chicago office. He has been acting director since May . . . **Frederick F. Hall** and **Michael V. Pregnoff** of Hall & Pregnoff, San Francisco structural engineering firm, have announced the addition of **Robert R. Matheu** to the partnership . . . **Samuel D. Kapelsohn** is now manager of Luria Engineering Company's Construction department . . . Appointed to the Delaware Water Pollution Committee is **Harold L. Jacobs,** a consultant on trade and waste disposal and pollution abatement with E. I. du Pont de Nemours & Co . . . **Robert W. Briggs,** of New Rochelle, N. Y., has been appointed consultant for the Connecticut Highway Department and the New York State Thruway Authority.

John M. Henderson, until recently professor of sanitary science in the Columbia University School of Public Health, is now a consultant to the Vector Control and Investigations Branch of the Communicable Disease Center, Public Health Service, Federal Security Agency . . . **Paul Beerman** will replace **Gerald E. Arnold** as director of San Diego's Water Department . . . New assistant chief engineer of the Boston & Maine and Maine Central Railroads, as well as of the Portland Terminal Co., is **Henry C. Archibald . . . Robert H. Hockberger,** formerly of the Corps of Engineers, has been appointed general manager and elected vice president of Griffin Equipment Co., Inc., of Hammond, Ind.

• **Honored**—Professional Engineers of Oregon named ex-president Herbert Hoover "Engineer of the century" at the Northwest centennial celebration in Portland, Aug. 9.

• **Retired**—**Fred W. Fisch,** deputy superintendent of the New York State Public Works Department, will retire Sept. 10, after six years of state service . . . **Kenneth G. McWane,** traffic and planning engineer for the Virginia State Highway Department, has resigned to become engineer of traffic and operations for the Highway Research Board in Washington . . . After nearly 45 years continuous railroad service, **Albert A. Johnson,** assistant chief engineer of the Lackawanna Railroad, has retired . . . **William H. Rayner,** professor of civil engineering, University of Illinois, and a member of the civil engineering department since 1910, will retire Sept. 1.

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"The installation of Coolite Glass provides easier seeing and better working conditions in our plant," reports A. P. G. McGinnes, Jr., Engineering Manager, American Non-Gran Bronze Co. "It filters out annoying glare, makes working conditions more comfortable and helps to improve quantity and quality of production. Coolite has proved to be a sound investment."

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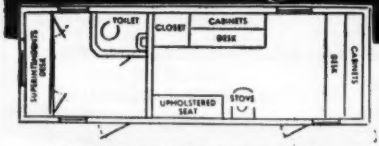

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OBITUARIES

Joseph P. Dever, 57, a civil engineer and a brother of Gov. Paul A. Dever of Massachusetts, died at North Scituate, Mass., Aug. 19. A veteran of both world wars, during most of his career he had done engineering work for Boston and the state, but for the last two years he was with Charles A. Maguire and Associates, Boston.

Valier Mayhew, 67, retired senior civil engineer for the New York State Department of Public Works, died in West Carthage, N. Y., Aug. 8. He was a graduate of Clarkson Institute and was first employed as a civil engineer with the New York Central Railroad. For two years he was assistant to the city engineer at Oswego, N. Y., and in 1914 went with state department.

Angelo Tomasso, 60, New Britain, Conn., contractor died Aug. 4. He built Brainard Aviation Field, Hartford, and a part of New York's Taconic Parkway. In 1922 he founded Angleo Tamasso, Inc. One of his first jobs was paving work on the Taconic Parkway in the Poughkeepsie area. His firm also built Beacon Dam, Beacon, N. Y. His firm later specialized in the paving and resurfacing of roads due to Mr. Tomasso's invention of Britainite, a road surfacing material. During the last 20 years almost all paving work in New Britain was done by his firm.

Floyd Hildreth Cherry, 76, retired University of California associate professor of mechanical engineering, died in Berkeley Aug. 6. A graduate of the Case Institute of Technology, Hildreth worked for Telluride Power Co. in Utah, Southern California Edison Co. and the Bureau of Reclamation before joining the staff of the university in 1918. He wrote the textbook, "Introduction to Elementary Engineering Graphics."

Floyd L. Strawn, 60, Charlotte, N. C., civil engineer, died Aug. 14. He obtained his engineering degree from George Washington University, and moved to Charlotte in 1920 where he was connected successively with Lockwood-Green Engineering Co., the Goode Construction Co., the V.P. Loftis Co. and the Charlotte Housing Authority. During World War I he served with the Ordnance Department in Washington and at the Aberdeen Proving Grounds, Md. In World War II he served in the Army Ordnance in Italy and Southern France.

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ARCHITECTURAL SPECIFICATION writer, assistant, with knowledge of construction trades and building materials, for large Detroit office. Experienced man preferred, but will train architectural or civil graduate with proven writing aptitude. Long term employment with nationally known architects and engineers. Salary $5000-$6500 to start depending upon experience and education. Send resume of above, with data available. P-4976, Engineering News-Record.

ASSISTANT MILL Metallurgist for large Copper Company Chile, South America. College graduate with some experience, to work in Mill Metallurgical Laboratory. 3-year contract. Transportation both ways and salary while traveling paid by company. In reply give complete details. P-5156, Engineering News-Record.

BRIDGE DESIGNERS—Checkers—Detailers—Experienced men for work on heavy truss and arch bridges and expressway structures. Health and insurance benefits, vacation and paid holidays—Top salaries. Permanent employment for those who qualify. P-5160, Engineering News-Record.

BRIDGE DESIGNERS. Experienced and inexperienced men with a civil engineering degree wanted for a period of about 24 months in the office of a well known organization in Central Pennsylvania. State qualifications, age, salary requirements and availability in first letter. P-4655, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT wanted for school work in N.Y.C. Must be good detail man and cost conscious. Salary good but not extravagant. Write outline of experience listing specific responsibilities. No drifters, no "project managers." P-5153, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT wanted to act as General Superintendent by one of the largest contractors in Western New York. Must be experienced in construction foundation work, commercial and general construction. Submit resume stating education, experience, age, availability and salary expected. P-5146, Engineering News-Record.

CONTRACTOR'S ENGINEER—Experienced in estimating quantities for all types of general building construction for general contractor located in central Pennsylvania. Civil or architectural engineering degree preferred, but not necessary. In reply, state experience, references, and salary desired. P-5135, Engineering News-Record.

DESIGNERS—DRAFTSMEN, for highways and bridges. Excellent opportunities. Be prepared to submit complete experience record. Ammann & Whitney, Consulting Engineers, 76 Ninth Ave., New York 11, N. Y.

DESIGNERS FOR bridges, structures, and sanitary work in Rhode Island. Send experience record to P.O. Box 752, Providence, Rhode Island.

DESIGNING DRAFTSMEN with experience in concrete or mill construction large Copper Company Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by company. In reply give complete details. P-5183, Engineering News-Record.

ENGINEER, CIVIL or Mechanical, experienced for field or office work. Write P.O. Box 126, Wilmington, Del.

FIRST CLASS Mill Metallurgist to work directly under Assistant Superintendent and be in full charge all testing and research large copper concentrator Chile, South America. Graduate engineer required with experience in operation milling plants using crushing, grinding and froth flotation etc. 3-year contract. Transportation both ways and salary while traveling paid by Company. In reply give complete details. P-5150, Engineering News-Record.

GENERAL MANAGER for medium sized structural steel fabricating plant in Mid West. Includes supervision of sales in surrounding area. Overall charge of branch office and plant of large progressive company. Experience in structural steel business required. Furnish full information regarding qualifications, experience and salary requirements. P-5161, Engineering News-Record.

GRADUATE ENGINEERS for responsible positions in consultant's office in Ohio. Structural engineer experienced in concrete design. Sanitary engineer experienced in design and operation of water and sewerage systems. Permanent positions intended. Salary open. Duties include supervision of detailers and draftsmen. Only engineers with proven ability need apply. P-5010, Engineering News-Record.

MECHANICAL ENGINEER to assist in supervision maintenance of fleet of Whitcomb Diesel Electric Locomotives, as well as general railway repair shops, large Copper Company Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by Company. In reply give complete details. P-5176, Engineering News-Record.

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P-5142, Engineering News-Record
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QUANTITY SURVEYOR experienced in general building construction for contractor's office located in central Pennsylvania. College graduate in Architectural or Civil Engineering preferred but not necessary. In reply, give experience, references, and salary desired. P-5066, Engineering News-Record.

SEVERAL ENGINEERS in office of consultant on sanitary projects, experienced in this or related fields such as structural or hydraulic. Permanent positions intended. Full information, references and salary requirement requested. Location, Ohio. P-5092, Engineering News-Record.

STRUCTURAL STEEL Detail Draftsmen and Checkers. All types of Structures. Vacation and bonus plan, group insurance, good working conditions. Only top quality men. Send complete written information, Sanborn, Steketee and Associates, 1214 Cherry Street, Toledo 2, Ohio.

WANTED: FOREMAN for sewer and water work. Send qualifications, experience and salary expected to: PO Box 329, Hyattsville, Md.

YOUNG CIVIL Engineering Graduate with some experience in maintenance of track and track equipment for Railroad Department large Copper Company Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by company. In reply give complete details. P-5172, Engineering News-Record.

POSITIONS WANTED

ACCT. CONST. Field Payroll Purchasing. Single. Expeditor 9 yrs. Experience. PW-5166, Engineering News-Record.

BRIDGE SUPERINTENDENT. Age 40. Over 20 years experience. Highway, Heavy and Railroad. Prefer jobs near $100,000.00. Under $7,000.00 Salary plus commission. PW-5153, Engineering News-Record.

C.E. GRADUATE, 25, married. 2 years with large steel fabrical com company on bridge and building construction. Desires work in field and/or office. Midwest or east preferred. PW-5167, Engineering News-Record.

CIVIL ENGINEER, Graduate, Registered. 21 years experience. Heavy Construction Supervision and Engineering Design. Desires permanent, responsible supervisory or Project Engineering position. South or Southwest. Other locations considered. Minimum salary $10,000. PW-5078, Engineering News-Record.

CIVIL ENGINEER: Registered Professional Engineer. Thirty years experience design, construction, all types of industrial, commercial buildings. Office, field supervision, estimating, contracting, management. Wishes position with owner, builder, architect, engineer. Domestic or foreign. PW-5121.

CONSTRUCTION SUPT: 30 years experience on concrete frame schools, hospitals, industrial and water treatment plants. Now completing 16 Army Barracks. Available Sept. first. PW-5094, Engineering News-Record.

ADMINISTRATIVE EXECUTIVE, ten years construction contracting experience New York area, purchasing, sub-contracts, supervision payrolls, insurance. State-Federal returns, costs, accounting, etc. Could relocate. PW-5198, Engineering News-Record.

FIELD SALES ENGINEER

The Job: To give on-the-job instruction and supervision to construction crews, foremen and superintendents in the best methods of installing pipe couplings, repair clamps and sleeves so as to insure proper installation. To make field studies and reports of such installations, developing therefrom new uses for present products and ideas for new products. To maintain contacts with technical personnel in the gas, water, and sewage markets. To cooperate with the Company's Engineering Department in improving installation procedures and product development.

The Man: Should be a college graduate with degree in mechanical engineering, between the ages of 25 and 35. Some field engineering experience in gas or waterworks pipe line construction preferable. Must have type of personality that will secure the liking, and command the respect of field crews, construction foremen, superintendents, etc. Must be willing to spend 75% of his time in the field.

The Company: The leading manufacturer of pipe couplings and pipe repairing devices. Future growth of gas and water lines business requires full time services of field engineer. Send complete resume of background and salary requirements to Personnel Manager.

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BRADFORD, PENNSYLVANIA
One of the Dresser Industries

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Experienced in Batch plant and Site control of Concrete Plant control and Site inspection of Asphalt paving; Compaction control of Earth fill, Soil boring and Core drill inspectors.

Engineering Geologists, Concrete Technologists, Asphalt Paving Technologists and Construction Engineer, Graduate engineers P.E. registration preferred, also materials laboratory technicians and chemists. Project in Midwest, South and East.

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TOLEDO, OHIO

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Experienced in Concrete, Pile Driving, Earth Cofferdams, and General Heavy Construction Work. Must Know Operation and Maintenance of Heavy Construction Equipment. Need not be graduate engineer but must have experience and qualifications mentioned. Work is in Gulf Area and the position is Open Now. Write details—age, experience, availability, etc., to

P-5148, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ESTIMATOR WANTED

Large construction firm has a permanent opening for an experienced estimator in building work. Write, stating full qualifications. This job pays well for the right man.

SHELBY CONSTRUCTION CO., Inc.
1106 Canal St., New Orleans, Louisiana
Attn: Mr. Lewis Leader— Phone: Raymond 1233

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Private Consulting Firm Engaged in General Civil Engineering Practice Desires Experienced Highway, Bridge and Reinforced Concrete Designers. Write, Giving Resume of Experience and Personal History to

P5147 Engineering News Record
520 N. Michigan Ave. Chicago 11, Ill.

POSITIONS WANTED

(Continued from the opposite page)

COST ENGINEER. 25, 3 years experience private utilities, 1 year A.E.C., desires position with private industrial contractor. PW-4965, Engineering News-Record.

COST ENGINEER, on public buildings, will represent you in Dist. of Col. & vicinity; experienced draftsman; has extensive experience on heating, ventilating & electrical. Will not consider straight commission. PW-5155, Engineering News-Record.

ELECTRICAL ENGINEER. 50 years old, single and free to travel. Thirty years experience in distribution, transmission and power plants. Principal employment with power company, engineers, and contractor. Now employed by government and desire change. Not interested in drawing board. Prefer field work with limited rough drafting and design which is normal with such work. Capable of planning, estimating and expediting. PW-5093, Engineering News-Record.

GRADUATE CIVIL ENGINEER, 25, with 1½ yrs. experience in bridge office and surveying, desires work with bridge or structural firm. PW-5100, Engineering News-Record.

MECH. ENGR., 13 yrs. design & field exp; plant layout & process piping (chemical, metallurgical & steam power plants); desires to associate with established consulting or contracting firm. Resume furn. Apt. 1-A, 552 Coventry Rd., Baltimore 29, Md.

PROJECT ENGINEER—Estimator, Industrial Processing and Boiler Plants, Utility and High Pressure Piping, Material-Handling, all related equipment and structures, "Trouble-Shooting," development of High-temperature equipment. Present salary $9,000. PW-5108, Engineering News-Record.

PROJECT MANAGER—Professional Engineer, 15 yrs design, construction & administration. Hydro & steam electric power stations, heavy industrial. Present concern has been advised. PW-5039, Engineering News-Record.

REGISTERED ARCHITECT — University degree, married, age 39, widely experienced all phases industrial, commercial, institutional, hydroelectric, public housing work, own business 7 years, 18 years executive and administrative capacity, including job promotion and public relations. Present salary in $16-18,000 per year bracket. Complete resume of experience and qualifications upon request. PW-5169, Engineering News-Record.

REGISTERED ENGINEER, with advanced degrees in Soil Mechanics and in Structures, desires position in same fields. 8 years professional experiences in Civil, structural design, construction, and materials testing. PW-5145, Engineering News-Record.

RESEARCH AND Development Engineer, structural and building products, 12 yrs. successful experience, married, 34, graduate C.E., desires responsible position with future. PW-5062, Engineering News-Record.

SANITARY ENGINEER. Five years professional experience. Industrial (boiler feed) and Municipal Water Treatment. Industrial and Municipal Waste Disposal. PW-5042, Engineering News-Record.

SANITARY ENGINEER—Qualified to assume responsible charge of investigations; preparation of reports, contract drawings and specifications; Letting of contracts; supervision of construction and initial operation of water and sewage works. Desires position with important future possibilities as result of hard work of outstanding calibre. Salary approximately $10,000 yr. PW-5131, Engineering News-Record.

SECRETARY FEMALE highly efficient trustworthy. Experienced Engineer Architect Contractor. $70. PW-5152, Engineering News-Record.

SOIL MECHANICS Engineer, age 31, varied experience in field soil surveys, foundation design and reports desires permanent position with future. Masters Degree from M.I.T. PW-5167, Engineering News-Record.

SUPERINTENDENT CONCRETE. Thoroughly experienced in all phases of concrete. From specifications to manufacture. Laying out of Plants, erection, designing of Mixers, Placing and handling of concrete, Batch and crushing plants foundations, refineries, powerplants, pre-cast runways. PW-5057, Engineering News-Record.

SUPERINTENDENT - PROJECT Manager — Qualified as journeyman in 9 trades before becoming C.E. Reg. Prof. Engr. New York and Michigan. Able to meet any agreed schedule and reduce unit costs. Reviews plans and details of all trades to obtain complete coordination in the field. Select proper tools and equipment to meet schedule. Desires position of responsibility on Hospitals, Bridges, Power Plants, Housing, Industrial and Heavy Construction. Extremely cost conscious. PW-5163, Engineering News-Record.

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69% interest in structural steel fabricating and miscellaneous iron work company, billing over $300,000 annually.
25,500 sq. ft., plant located in Oakland, Calif., on 86,000 sq. ft., plot fronting on San Francisco Bay. Spur track, installed way for launching barges, etc., 4 travelling cranes, good machines and tools.
Good stock of steel and contract for 6 months work on hand.
BO-5023, Engineering News-Record
68 Post St., San Francisco 4, Calif.

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NEW CRAWLER TRACTORS
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Cash Waiting
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Quickway Model E with shovel or pull shovel attachment, mounted on 6 x 6 or 4 x 4.
OR
Shield Bantam with same attachments.
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Booms, Fairleads, Lagging and Gantry
for 1¼ yard and 2 yard dragline cranes.
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STEEL PANEL FORMS
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1932 Model. 5000 watts, 110/220 volts, 60 cy. AC, one phase, 50 amps. Takes starting overload up to 87 amps. Integrally mounted separate exciter giving exceptional overload and surge capacity for starting motors. Drip-proof constr. 3all bearing lifetime lubrication. Voltmeter, 2 plug-in receptacles. Wisc. air cooled. 2 cyl. 4 cy. 10½ HP engine.
Brand New
Special Price $645
Wt. 575 lb
Generator only $325
Wt. 225 lbs.
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1—Osgood 1½-yd Combination Shovel and Crane, completely rebuilt.
1—820 Lorain 2-yd Shovel in excellent condition.
1—54B Bucyrus Erie Shovel, reconditioned.
1—750 Lima 1¾-yd Shovel, Diesel, working condition.
FOR RENT
1—Lorain Moto Truck Crane.
1—Lorain combination shovel, backhoe and crane.
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2—Rear End Dump Euclid Trucks.
2—L. P. Scrapers 12 to 15 cu. yds.
1—500 Worthington Compressor with 2 wagon drills.
2—10 Wheel Ward LaFrance Dump Trucks.
1—31E Koehring Paver.
2—Finishers.
1—Longitudinal Finisher.
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8,500 lin. ft. of 8" Road Forms.
FS-5106, Engineering News-Record
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MICHIGAN T-6-K 1947
⅜ yd. bucket shovel front and crane boom.
T. LANDI & SONS
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Under List Price
MODEL WC28
With heavy duty WC-32 motors and running gear payload approx. 8-10 tons. Eight with 7 cu. yd. dump bodies, 158" wheelbase; 4 with stake bodies, 176" wheelbase.
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LIMA 1201

Shovels
Cranes
Drag-lines

Located
Trenton, N. J.;
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SHOVELS
(Standard or high front)

CRANES
(Up to 120 ft. boom)

Lima Model 604, Combination 1½ yd. Shovel and Dragline. New 1948. Serial 4562. Located Syracuse, N. Y.

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1—Model 75 Lorain 1½ yd. Crawler Crane, Ser. 11281, power 150 HP Cat. Diesel Mdl. D-13000, 90' boom, 20' jib, high gantry. Wt. approx. 75,000#. For rent or sale.
1—Mdl. 501 Koehring #1071, 60', 70', 80' boom, 18' jib, Mdl. K Wisc. gas eng. Cap. 40,000# @ 12'. Wt. 97,200#.

AIR COMPRESSORS
Portable 2-stage

3—500 cu. ft. Ing. Rand, 2 powered by Waukesha-Hesselman Diesel engines, one on pneu. tires and one on steel wheels, 1 powered by Waukesha gas eng. on steel wheels.
25—Sullivan, Le Roi, Chicago Pneumatic, Ing. Rand, Schramm, Gardner Denver, from 60 to 500 cu. ft.

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1—1-¼ yd. Williams Hercules heavy duty digging bucket #1732. Wt. 6200#.

BUCKETS, CONCRETE

2—5 yd. Laydown type Gar-Bro concrete buckets, double clamshell gate opening, size 20x28". Like new condition.
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BUCKETS, DRAGLINE

2—Northwest Type H 2½ yd. Wt. 4000# ea.
1—2 yd. Page Type RH, wt. 5300#.
1—Omaha 3 yd. Type L-9, wt. 4000#.
1—Page Type M 1½ yd., Wt. 4000#.
2—1 yd. Page automatic, Mdl. RC.
1—½ yd. Page #2-2671, Mdl. RH, Wt. 2100#.

CRANES, LOCOMOTIVE

1—25 ton Industrial Brownhoist Type G, 40-50-80' boom, Nat'l. Board Boiler, 150#.

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2—American Terry steel erectors, 70' mast, 60' boom, 6 ton @ max., 11 ton @ 20'. Also have extra center sections.
2—10-15 ton all steel Stiffley Derricks, 60' booms, 10' bullwheels. Hook or clam.

ENGINES, DIESEL

1—6 cy. Hercules Mdl. DFXE, clutch, radiator & elec. starter. 156 HP at 1200 RPM. Never used. Like new. A real buy.
1—6 cyl. Cummins, radiator, house, clutch & starter, 93 HP at 1600 RPM contin. duty.
1—Caterpillar Mdl. 468, 8 cyl., starter, generator, Twin Disc clutch, rated 60 HP.

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1—100 HP American 3/drum, #18888M, 3/60/440 slipring, 9,000# @ 275 FPM, with attached Lidgerwood swinger.
3—60 HP 2/drum Thomas, with attached swinger, Sers. 9177, 9178, 7834. 2 powered by 60 HP G.E. slipring motors 220/440/60/3; one without power. Cap. 7,000# @ 200 FPM.

LOCOMOTIVE, GAS, STD. GA.

1—15 ton Vulcan Std. Ga. gasoline powered locomotive, Ser. 3903, 6 cyl. Mdl. JMS LeRoi gas eng. Wt. 30,000#.

ROAD ROLLERS

1—10 ton 3-wheel Hercules #1197, 4 cyl. Cummins Diesel eng #10703, Hydraulic steering. Wt. 24,500#.
1—10 ton 3-wheel Huber #7185, 6 cyl. 59 HP Buda gas eng., hydraulic steering. Wt. 20,000#.

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1 Northwest Diesel Backhoe, Model 25
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Spare Parts for Caterpillar D-8, D-7, D-6

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Structural and/or Intermediate Grade 40' ⅜", ½" quality ASTMA 15/39 ⅜", ¾", ⅞" quality ASTMA 305 FOB Gulf and Atlantic Ports. Prompt Delivery; NO CMP required.

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1—Plymouth 20 Ton Diesel—48" & Std. Ga.
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8—Trucks Complete with Motors. Whitcomb 65 Ton Diesel-Electric. Like new Bargains.

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19—Hopper Cars—15 Ton—36" Ga.
3—Hopper Cars—50 Ton. Excellent.
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3 and 4 cubic yard high discharge transit mixers mounted on single and tandem axle trucks.
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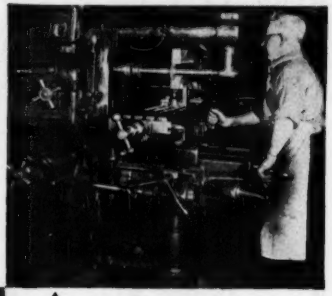

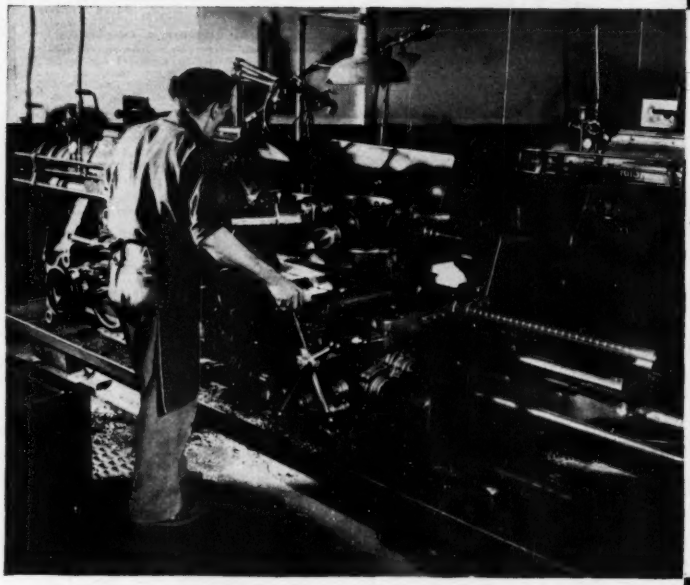

Milling operation on #3 Brown Sharpe milling machine.
Milling slot in Hoist control lever for American locomotive crane now being rebuilt for Babcock-Wilcox Tube Co., Barberton, Ohio.

Turret Lathe operation on #5A Gisholt turret lathe.
Turning—boring—facing and cutting to length. Bronze bushings for Lorain 820 turntable rollers. With parts in short supply as they are today, the ability to help ourselves is money in our customers' pockets.

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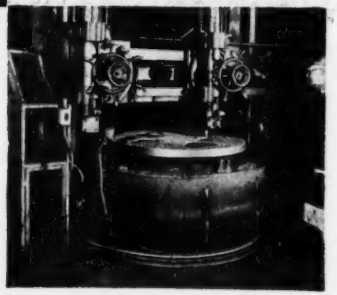

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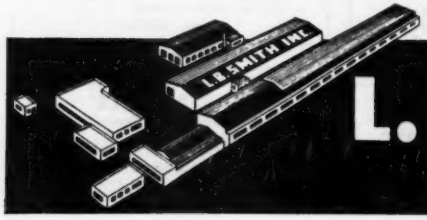

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L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 No. 5

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Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Schramm 105 cubic foot gas powered compressor on 4 steel wheels.
Pennsylvania 12" x 10" class 3A single cylinder, 355 cubic foot P.D., flat belt driven 50 HP slip ring motor.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

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2036 Cedarapids primary unit.
1036/2418 Cedarapids Jr. Tandem unit.
4024 Cedarapids roll, rebuilt.
3018 Cedarapids roll, rebuilt.
Cedarapids Rock-It plant with 2025 jaw, 3033 mill. New.
Cedarapids 1236 Model 6C plant, new.
4033 Cedarapids Hammermill, rebuilt.
1030 Good Roads. Reconditioned.
10x7 Allis-Chalmers Blake type jaw crusher.
#1 Cedarapids Kubit impact breaker.
4' x 6' Kennedy Van Saun single deck.
3' x 6' Kennedy Van Saun triple deck.
15 cu. yd. Cedarapids sand drag, new.
18" x 90' bucket elevator.
60-ton, 2-compartment, 8'x18' storage bin with clamshell gates.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

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1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.
Model CR Tournapull w/16-yd. Model E16 Tournarocker, rebuilt.

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1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 77, 1½-yd. shovel, gas or diesel power.
Osgood Chief, 1¾-yd. diesel combination.
Lorain 37, 1¼-yd. diesel. Excellent.
Lorain L-50, 1-yd. diesel. New condition.
Lorain 40 truck crane on Mack 3-axle truck.
Unit 1020, ½-yd. shovel, good condition.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.

Backhoe Buckets & Attachments

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #6101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

2—45" Ohio lifting magnets, rebuilt.
1—36" ECM lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 830, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-13' finishers, rebuilt.
1220'—Heltzel 9"x8" road forms with stakes.
Cleveland formgrader, new 1944, rebuilt.
Corr formgrader, new 1944, rebuilt.

TRACTORS

Ford Dearborn rubber tired with hyd. front end loader and hoe attachment.
TD9 International diesel with 1 yd. Loadover.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching Machine 18" to 24" cutting width, 7' depth.

PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3800 GPM at 128' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

GRADERS

Austin Western 77 tandem drive, scarifier, 12' blade, gas power, hydraulic controls.

GASOLINE AND DIESEL ENGINES

Caterpillar D11000, rebuilt.
Caterpillar D13000, rebuilt
Buda, Hercules, Hill diesels, rebuilt.
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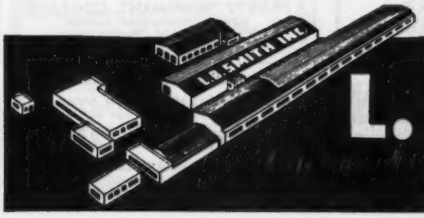

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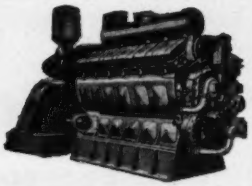

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750	General Motors	12-567	1080	720	200	General Motors	8-268A	350	900
500	General Motors	8-278A	750	720	100	General Motors	3-268A	150	1200
500	General Motors	8-567	720	720	100	Worthington	BB-6	150	600
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14"	4	1/16"	1/32"	28 Oz.
16"	4	1/8"	1/32"	28 Oz.
18"	4	1/8"	1/32"	28 Oz.
20"	4	1/8"	1/32"	28 Oz.
20"	5	1/8"	1/32"	28 Oz.
24"	4	1/8"	1/32"	28 Oz.
24"	5	1/8"	1/32"	28 Oz.
26"	5	1/8"	1/32"	28 Oz.
30"	4	1/8"	1/16"	32 Oz.
30"	5	1/8"	1/16"	32 Oz.
30"	6	1/8"	1/16"	32 Oz.
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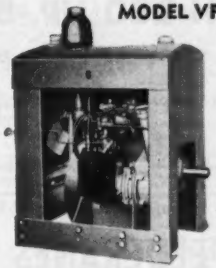

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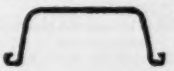

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2—1924 American W W Vert Cent Pumps $1,000 each.

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- Outriggers sides and rear;
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- Model YU-5-SOE, 150" wheelbase, 14x20 tires;
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- One man operation complete unit.

Top mechanical condition; mileage 4237.

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Manitowoc Diesel Powered Speedcranes for rent. 25, 40 and 60 ton capacities with booms 100' or more, 20' and 30' jibs. Special price on long rentals.

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2—Manitowoc 3000B Cranes,
1 new and 1 in A.A.A condition. 100 foot of boom and 20 foot of jib for each.
1—Marion 1-½ yd. Crane,
Model 362 with shovel front, in very good condition.

DICK CONSTRUCTION COMPANY
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MANITOWOC SPEEDCRANES

Model 3500 — crane or dragline — 80 ft. boom — manual swing — 20' or 30' jibs — 60 ton lifting capacity — or 2½ c.y. drag bucket.

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CONCRETE BUSTER, Rapid Model H Jr., on rubber—excellent .....$2,800.00.

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OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY.

Bids: September 4, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, Albany, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time on THURSDAY, SEPTEMBER 4, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, District Engineer, 353 Broadway, Albany, New York				
Albany	C.T. 52-4	N. Y. State Thwy-Catskill Sect.—	0.14	9" Cem. Conc. Pavt.	$96,000	$1,761,000
	C.T.C.52-5	Sub. 4 (Normanskill Bridge)		2 @ 37 = 0.12 Mi.;	Plans $15	
				Misc. Work = 0.02 Mi.		
				Deck Truss (Alpha) 623.82'		
		DISTRICT No. 2				
		LACY KETCHUM, District Engineer, 109 No. Genesee St., Utica, New York				
Madison & Oneida	M.T.52-9	N. Y. State Thwy-Mohawk Sect.	(1.19	Grading & Drain.=0.36 Mi.	$75,000	1,374,000
	M.T.C.52-10	—Sub. 4 (Oneida-Verona Sta.)	Acc)	Asp. Conc. Ty. 1-A	Plans $25	
	S.T.52-18	Lake St.; Sconondoa Rd. & Sand	0.38	Opt. = 1.19 Mi.		
	S.T.C.52-19	Hill Rd.		RR Sep. Alpha I-Beam 174.2'		
				Alpha I-Beam Br. 160.5'		
				Hy. Sep. Alpha I-Beam 204'		
				Hy. Sep. Alpha I-Beam 263.33'		
		DISTRICT No. 3				
		WM. ROBINSON, District Engineer, Weigh Lock Building, Syracuse, New York				
Onondaga	O.T.52-12	N. Y. State Thwy-Ontario Sect.	(0.60	9" Cem. Conc. Pavt.	$105,000	1,893,000
	R.C.52-91	—Sub. 7 (Warners-Route 370);	Acc)	2 @ 25, 24'	Plans $25	
	S.T.52-20	Baldwinsville-State Fair	0.20	Wide = 0.48 Mi.;		
		S.H. 8496 & Van Vleck Road		Asp. Conc. Ty. 1-A,		
		Connection		Opt. = 0.18 Mi.		
				Misc. Work = 0.14 Mi.;		
				Hy. Sep.		
				Alpha I-Beam 265.75'		
				Br. Plate Girder 450'		
		DISTRICT No. 4				
		J. P. LARSEN, District Engineer, Barge Canal Terminal, Rochester, N. Y.				
Monroe	LOSP 52-2	Lake Ontario State Pkwy.	1.59	Grading & Found. Course	$66,000	1,229,000
		Section C		3 Sp. Alpha I-Beam 200'	Plans $25	
				Reinf. Conc. Slab 30.5'		
				Twin Closed Box Br. 23.1'		
Ontario	FAC 52-8P	Proj. U & UG 452(6)	0.98	9" Cem. Conc. Pavt. 48'-58'	$65,000	1,214,000
	FAC 52-9	Geneva City: Lake Front		Wide = 0.85 Mi.;	Plans $25	
	FAGC 52-10	Arterial Pts. 1 & 1-A		Asp. Conc. Ty. 1A Opt.		
				= 0.11 Mi.; Misc. Work		
				= 0.02 Mi.		
				RP Sep. 5 Sp.		
				Alpha I-Beam = 326.08'		
				Hy. Sep. Rigid Frame		
				Arch = 70'		
Ontario	O.T.52-10	N. Y. State Thruway-Ontario	(4.58	9" Cem. Conc. Pavt.	$298,000	5,276,000
	R.C.52-76	Sect.—Subd. 13 & 14 (Town	Acc)	2 @ 25 & Var. Wide =	Plans $100	
	S.T.52-16	Line-Pt. Gibson Rd.);	9.88	11.09 Mi.; Asp. Conc. Ty.		
		Canandaigua Interchange;		1A Opt. = 0.80 Mi.;		
		Chapin-Palmyra Pt. 2,		D.S.T. Br. Stone = 1.61 Mi.		
		S.H. 1549 & 8 cross roads.		Misc. Work = 0.96 Mi.;		
				3 Hy. Sep. Alpha I-Beams 203.5', 235.5' & 230.84'		
				1 Interchange Alpha I-Beam 224.75'		
				2 Brs. Alpha I-Beam 154' each		
		DISTRICT No. 6				
		H. F. BRUMM, District Engineer, State Office Building, Hornell, N. Y.				
Steuben	FARC 52-88	Proj. F-205(3); F-503(8)	4.18	9" Cem. Conc. Pavt. 24'	$85,000	1,583,000
		Erwin-Lawrenceville Pts. 1 & 2		Wide	Plans $25	
		S.H. 1503-8146		Twin R.C. Box Br. 52,		
				R.C. Box Br. 22'		
		DISTRICT No. 8				
		J. S. BIXBY, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Ulster	R.C.52-87	Marlboro-Cedar Hil Cemetery	3.39	Asp. Conc. Ty. 1A,	$9,000	$166,000
		S.H. 5176		Optional	Plans $10	
		Milton-Marlboro, S.H. 5114				
		DISTRICT No. 9				
		F. W. DONOVAN, District Engineer, 71 Frederick St., Binghamton, New York				
Sullivan	FARC 52-89	Proj. S-3787(1)	7.29	Asp. Conc. Ty. 1-A, Opt.	$85,000	1,566,000
		Liberty-Jeffersonville		Reinf. Conc. Box Br. 36.25'	Plans $25	
		Pts. 2 & 1, SH 700-699		3 Reinf. Conc. Slab Brs.		
				30', 34', 30'		

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: September 4, 1952

Construction of a Road

NOTICE TO CONTRACTORS: State Department of Public Works, Albany, N. Y.—Pursuant to the provisions of the Public Buildings Law, sealed proposals will be received until: ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 4th day of September 1952, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the Construction of the following project in Suffolk County.

Contract No.	Type	Name of Highway and Miles for Plans	Deposit and Deposit	Bid 5% of bid	Dept. Estimate
B.P. 52-48	Snow Fence to Arrest Beach Erosion	Village of Ocean Beach 0.32 Miles	$10.00	$5,000	$5,500

Maps, plans, specifications, and estimates may be obtained at the office of the Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineer J. J. Darcy, Dist. Engr., Montauk Highway at Little E. Neck Rd. Babylon, Long Island, N. Y. and may be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Law, as set forth in "Instructions to Bidders."

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: September 30, 1952

Construction of Covered Canal

New Orleans, La., August 25, 1952.

Sealed proposals will be received by the Sewerage and Water Board of New Orleans, at the office of its Purchasing Agent, Room 502, No. 526 Carondelet Street, up to 11 o'clock A.M., C.S.T., of Tuesday, September 30, 1952, and publicly opened immediately thereafter, for:

CONTRACT 247-D
CONSTRUCTING APPROXIMATELY 3650 LINEAR FEET OF 28 FOOT, 1650 LINEAR FEET OF 24 FOOT AND 180 LINEAR FEET OF 16 FOOT REINFORCED CONCRETE LINED AND COVERED CANAL IN MELPOMENE AVENUE FROM PUMPING STATION NO. 1 TO SO. CLAIBORNE AVENUE AND IN S. CLAIBORNE AVENUE FROM MELPOMENE AVENUE TO THIRD STREET AND TRIBUTARY PIPE LINES IN VARIOUS STREETS.

Plans, specifications and proposal forms may be obtained at the office of the Board. A cash payment of $5.00 will be required for each set of plans and specifications issued and no refund will be made for their return. The right is reserved to reject any or all proposals and to waive informalities.

J. E. MORRILL, Secretary — A. B. WOOD, Genl. Supt.

OFFICIAL PROPOSALS

Bids: September 10, 1952

Filter Plant and Pipe Lines

FOR THE
CANTON BOROUGH AUTHORITY
CANTON, PENNSYLVANIA

Sealed proposals will be received by the undersigned at the offices of the Canton Borough Authority, Troy St., Canton, Bradford Co., Pennsylvania, until 2:00 P.M., E.S.T. Sept. 10, 1952, at which place and hour they will be publicly opened and read, for furnishing all necessary labor, materials and equipment, and performing all work for the construction of A FILTER PLANT AND PIPE LINES and all appurtenances for the Canton Borough Authority.

Proposal must cover the entire construction and the necessary equipment, labor and materials required for Section A (FILTER PLANT) and/or Section B (PIPE LINES). The right is reserved to reject any or all proposals and to re-advertise and award the contract in the regular manner, or to waive any informality in the proposals received and to accept any proposal deemed to be most favorable to the interest of the Canton Borough Authority.

Each proposal must be accompanied by a money deposit in the form of a draft or a certified check on a solvent bank, payable to the Canton Borough Authority, in an amount not less than ten (10) per cent of the bid total, in accordance with the provisions contained in the Specifications. A satisfactory bidder's bond will be accepted in lieu of check. The deposits of bidders other than the one to whom the contract is awarded will be returned immediately after the award is made. The successful bidder will be required to execute a contract and furnish bonds within ten (10) days from the date of notice of award delivered or mailed to him. Upon execution of the contract and approval of the bonds the deposit of the successful bidder will be returned. The amount of security required for the faithful performance of the work will be one hundred (100) per cent of the estimated cost of the work according to the contract price.

Copies of the Contract Documents, including Plans and Specifications, may be seen at the office of Gannett Fleming Corddry and Carpenter, Inc., 600 North Second Street, Harrisburg, Pennsylvania, or at the office of the Canton Borough Authority, Troy St., Canton, Pa., on or after Aug. 20, 1952; or they may be obtained at either of the above places upon deposit of Twenty-Five ($25.00) Dollars for each set. A refund will be made in full to actual bidders for return of one set in good condition within ten (10) days after closing date for receipt of bids; refund for return of all other sets, in good condition within the same period, will be fifty (50) per cent of the deposit.

C.M.P. approval has been granted for the construction of this project.

Gannett Fleming Corddry and
Carpenter, Inc., Engineers
600 North Second Street
Harrisburg, Pennsylvania

Canton Borough Authority
Troy Street
Canton, Pennsylvania

Bids: September 3, 1952

Delaware Memorial Bridge

DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS
CONTRACT NO. 24
RIGHT OF WAY FENCE

Sealed proposals for construction of right of way fence along the approaches to the Delaware Memorial Bridge, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Administration Building, Delaware Memorial Bridge, Delaware, until 11 o'clock Eastern Standard Time, (12 o'clock Eastern Daylight Saving Time), September 3, 1952, at which time and place said proposals will be publicly opened and read.

The work involves the following approximate principal quantities:—

Corner and Pull Posts	60
End Posts	17
Line Posts	1475
Farm-Field Fence	24700 lin. ft.
Relocating Chain-Link Fence	570 lin. ft.

Performance of this Contract shall begin promptly after execution of the Contract and shall be completed on or before December 1, 1952.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all bids.

One set of the Plans and two copies of the Specifications may be obtained from the Engineers; Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y., after July 24, 1952, upon payment of $10.00.

Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing and an extra copy of the Specifications upon payment of $2.50 per copy.

Plans and Specifications need not be returned to the Engineers, and the above payments will not be refunded.

The Plans and Specifications and other contract documents may be examined at the office of the Engineer, Howard, Needles, Tammen & Bergendoff, or at the Engineers' project office located north of and adjacent to the west abutment of the Delaware Memorial Bridge in the State of Delaware.

State Highway Department
by: J. Gordon Smith, Chairman
W. A. McWilliams, Director
Delaware Crossing Division
August 28, 1952

Bids: September 16, 1952

Four Pump Houses

BOROUGH OF EDGEWATER

PUBIC NOTICE is hereby given that sealed proposals for furnishing labor and materials for the construction, as part of the sewerage system of the Borough of Edgewater, of Four Pump Houses, will be received by the Mayor and Council of the Borough of Edgewater, Bergen County, New Jersey, at the Council Chambers of the Municipal Building on the 16th day of September, 1952, at 7:00 o'clock P.M.

Bidders will have an opportunity to bid on the structures alone, on the equipment alone, and on a combination of both items, as will more fully appear from an examination of the Plans and Specifications for such work. Bidders will also be given an opportunity to bid on the electrical work.

The Plans and Specifications for the various types of work may be inspected without charge at the office of the Borough Engineer, in the Municipal Building, Edgewater, New Jersey, during business hours, to and including September 12, 1952.

Copies of such Plans and Specifications may be obtained by the payment of $25.00 in cash or by certified check (not returnable), at the office of Roscoe P. McClave, Consulting Engineer, 600 Gorge Road, Cliffside Park, New Jersey, during the same period.

The Mayor and Council hereby reserve the right to make such award of contracts for this work as will best serve the interests of the Borough of Edgewater, and the right to reject any or all bids is likewise reserved.

Dated: August 19, 1952

PETER F. O'BRIEN,
Borough Clerk

Bids: September 23, 1952

Shavertown Bridge Piers and Abutments

CONTRACT 415

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tuesday, September 23, 1952, for Contract 415, for the construction of the piers and abutments of the Shavertown bridge, in the Town of Andes, Delaware county, New York. The bridge will cross the valley of the East Branch of the Delaware river at a point about one mile east of the village of Shavertown. The piers and abutments will be constructed of reinforced concrete and partly faced with granite, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of fifty thousand dollars ($50,000.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained at the office of the Chief Engineer, Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, RUFUS E. McGAHREN, EDWARD C. MAGUIRE, Commissioners, Board of Water Supply; RICHARD H. BURKE, Secretary.

Read the Official

Proposal Columns of

ENGINEERING NEWS-RECORD

This Week and Every Week

U. S. Government

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF SANITARY ENGINEERING, D. C., August 8, 1952. SEALED PROPOSALS will be received in Room 429, District Building, 14th and E Streets, N. W., Washington 4, D. C., until 2:00 P. M., September 25, 1952, EASTERN DAYLIGHT TIME, and then publicly opened and read for Sludge Disposal Plant, Structures and Equipment (Unit 17), and Chimney (Unit 18), Sewage Treatment Plant, Washington, D. C. This project will house equipment, able to dry or incinerate sewage sludge removed by a high rate activated sludge treatment plant to serve 1,500,000 persons. Proposal Forms, Drawings and specifications may be obtained from the Chief Clerk, Engineer Department (Secretary, Contract Board, D. C.), Room 427, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C., in the amount of FIFTY DOLLARS ($50.00), for each set. (Telephone National 6000, Ext. 2378)

Department of Commerce, Bureau of Public Roads, August 19, 1952. SEALED BIDS will be received at the office of the Bureau of Public Roads, 214 Globe Building, 4th and Cedar Sts., St. Paul, Minnesota, until 11:00 a.m., C.S.T., SEPTEMBER 19, 1952, for Minnesota Forest Highway Project No. 5-L,M, Superior National Forest, Cook County, Minnesota. 10.560 miles Grading, Draining and Gravel Surfacing on the Grand Marais-Gun Flint Road. The approximate quantities of the more important items are 65 acres Clearing and Grubbing, 183,000 cu. yd. Excavation, 76,000 cu. yd. Borrow and 27,200 cu.yd. Gravel. Minimum wage rates have been fixed as required by law. Plans, Specifications and Proposal forms are available upon request at the address given above, or Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia. H. J. Speiman, Division Engineer.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3777) will be received at Provo, Utah, until September 23, 1952, for furnishing labor and materials for earthwork and structures, Provo River Banks, Jordanelle to Deer Creek Reservoir, Provo River Project. Location: Vicinity of Heber, Utah. Principal items are: 18,000 cu.yds., construction of embankments; 10,000 mi. cu.yds., overhaul; 45,000 tons, riprap; and other work. Completion time 220 days. For particulars, address Bureau of Reclamation, Provo, Utah; or Building 53, Denver Federal Center, Denver, Colorado.

(Continued on following page)

OFFICIAL PROPOSALS

Bids: September 9, 1952

Extension of Northern Boundary Fence

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
EXTENSION OF NORTHERN
BOUNDARY FENCE
CONTRACT NYA-140.014

Sealed proposals for furnishing and installing a chain link fence along the northern boundary of New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 2:30 P.M., Tuesday, September 9, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $10 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK
AUTHORITY
Howard S. Cullman, Chairman

New York, August 28, 1952.

Bids: September 9, 1952

Interior Finishes—Room 1305

THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUS TERMINAL
CONTRACT BT-110.068

Sealed proposals for furnishing and installing interior store finishes and equipment for Room 1305 on the Main Concourse in the Port Authority Bus Terminal will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 2:30 P.M., Tuesday, September 16, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $10 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK
AUTHORITY
Howard S. Cullman, Chairman

New York, August 28, 1952.

Bids: September 9, 1952

Road Work

SEALED PROPOSALS will be received by the President of the Levy Court of New Castle County, Room 134-A, Public Building Wilmington, Delaware, until 11:00 A.M. Daylight Saving Time, on September 9, 1952 and at that time publicly opened for contracts involving the following approximate quantities:

CONTRACT SD-40
Westwood Manor
New Castle County

3,500	C.Y.	Excavation
55	C.Y.	Rock Excavation
55	C.Y.	Borrow Pit Stripping
1,500	C.Y.	Selected Borrow
1,600	T.	W.B. Macadam
640	T.	Hot Mix Asphaltic Conc.
0.5	C.Y.	Conc. Masonry
220	Lb.	Reinf. Steel
99	L.F.	12" R.C. Pipe
21	L.F.	15" R.C. Pipe
399	L.F.	18" R.C. Pipe
90	L.F.	Relay 4" Vit. Clay Pipe
25	L.F.	New 4" Vit. Clay Pipe
3,860	L.F.	Integral Curb & Gutter
5	ea.	Catch Basins
1	ea.	Man Holes
2,500	LB.	Castings
1,100	S.Y.	Topsoil
0.22	A.	Seeding
1,000	Gal.	Tack Coat R.C. 1
7	ea.	Special Frame & Cover for Center Stone Mon.
7	ea.	Adjusting Stone Mon.

CONTRACT SD-41
Maplewood Lane
New Castle County

1,500	C.Y.	Excavation
190	C.Y.	Rock Excavation

OFFICIAL PROPOSALS

50	C.Y.	Borrow Pit Stripping
650	C.Y.	Selected Borrow
720	T.	W.B. Macadam
290	T.	Hot Mix Asphaltic Conc.
500	Gal.	Tack Coat R.C. 1
35	Lbs.	Reinforcing Steel
36	L.F.	18" R.C. Pipe
10	L.F.	4" V.C. Pipe
75	S.Y.	Cement Conc. Gutters
1,890	L.F.	Integral Conc. Curb & Gutter
24	S.F.	Sidewalk Cement Conc.
1	ea.	Catch Basins
410	Lbs.	Castings
750	S.Y.	Topsoil
0.17	A.	Seeding
675	S.Y.	Sodding
350	L.F.	Ditching
4	ea.	Dogwood Trees (3" Caliper)
2	ea.	Blue Spruce (6' High)

CONTRACT SD-42
BLUE ROCK MANOR
(Median Drive)
New Castle County

2,450	C.Y.	Excavation
100	C.Y.	Borrow Pit Stripping
1,300	C.Y.	Selected Borrow
1,400	T.	W.B. Macadam
530	T.	Hot Mix Asphaltic Conc.
250	Gal.	Tack Coat R.C. 1
10	L.F.	4" V.C. Pipe
10	L.F.	6" V.C. Pipe
120	S.Y.	Cement Conc. Gutter
3,650	L.F.	Integral Conc., Curb & Gutter
85	S.F.	Sidewalk Cement Conc.
1,000	S.Y.	Topsoil
0.20	A.	Seeding

CONTRACT SD-43
WOODCREST
New Castle County

50	C.Y.	Excavation
60	T.	W.B. Macadam
20	T.	Bituminous Concrete
165	S.Y.	Cement Concrete Gutter
1,500	L.F.	Integral Curb & Gutter
1,300	L.F.	Removal of Existing Curb and Gutter
1,500	Gals.	R.C. 3 Seal Coat
70	T.	½" Stone Chips
7	Each	Special Frame and Cover
77	Each	Adjusting Stone Monument
2	Each	Adjusting Manholes

Attention is called to the Special Provisions in the proposal, specifications and contract agreement.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the County Engineer.

Each proposal must be accompanied by a surety bond, certified check, or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Suburban Development Contract No. ——."

The contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

Complete sets of plans and specifications may be obtained after August 5, 1952 upon receipt of two dollars ($2.00) for each contract, which amount will not be refunded.

Make checks payable to the Levy Court of New Castle County.

LEVY COURT OF NEW CASTLE COUNTY
BY: JOHN TAYLOR
COUNTY ENGINEER

OFFICIAL PROPOSALS

St. Paul District, Corps of Engineers, US Army, 1217 U.S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this office until 2:00 P.M., C.S.T., September 9, 1952, and then publicly opened, for Repairs to Watson Sag Dike and to Emergency Spillway and Stone Protection at Dam, Lac qui Parle Flood Control Project, Minnesota River, Minnesota.

DEPARTMENT OF THE INTERIOR. Bureau of Reclamation. Sealed bids (Specifications No. DC-3779) will be received at Riverton, Wyoming, until September 18, 1952, for furnishing labor and materials for earthwork and structures—Cottonwood Drain, Station 83+50 to Station 304+70.8, Wyoming Canal Lateral System, Riverton Project, Wyoming. Location 20 miles north of Riverton, Wyoming. Principal items are: 50,000 cu.yds. excavation; 125 cu.yds. concrete; 600 lbs. metal gates; and other work. Completion time 150 days. For particulars, address Bureau of Reclamation, Riverton, Wyoming; or Building 53, Denver Federal Center, Denver, Colorado.

SEARCHLIGHT SECTION

This index is published as a convenience to the reader. Every care is taken to make it accurate but Searchlight Section assumes no responsibility for errors or omissions.

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FNMA to bolster housing

"Fannie Mae," the Federal National Mortgage Association, will resume purchases of non-defense housing mortgages Sept. 2. This is expected to strengthen the mortgage market because "Fannie Mae" will buy Veterans Administration and Federal Housing Administration-insured mortgages at par.

VA 4% mortgages have been selling generally at a discount in recent months and FHA 4¼% mortgages have sold for less than par in some areas. Fannie Mae support will help to restore these mortgages to full value. It may also be the government's answer to mortgage bankers' demands for a boost in the VA and FHA interest rates.

It is anybody's guess as to how large the volume of Fannie Mae purchases will be in the first few months. The Housing Act of 1952 restricts Fannie Mae purchases to mortgages insured or guaranteed since Feb. 29, 1952.

Further, the law says that only the original lender can sell to Fannie Mae, and it restricts those sales to 50% of his VA mortgages and 25% of his FHA mortgages, guaranteed or insured since Feb. 29. And the lender must hold the mortgage for 60 days before selling to Fannie Mae.

Despite those restrictions, the backlog built up since Feb. 29 may produce large offerings to Fannie Mae in the first months after Sept. 2.

A year ago, Fannie Mae set aside $400 million of its authorization for purchase of defense, military and disaster housing mortgages and later increased the set-aside to $600 million. Congress authorized Fannie Mae to use $252 million of that for pre-commitments to buy such paper. This pre-commitment money was soon taken up. In the Housing Act of 1952, Congress this summer gave Fannie Mae $900 million for such pre-commi[illegible]nt use.

At the same time, it authorized Fannie Mae to use what was left of its original set-aside (for purchase of defense housing mortgages) to buy non-defense paper. With accumulated money from mortgage sales, this fund amounts to about $400 million.

Fannie Mae expects this to last to the end of the fiscal year, next June 30. To last that long, purchases will have to be lower than they were before April 2, when Fannie Mae ran out of non-defense authorization.

In the six months before April, purchases ranged from $51 million to $86 million per month and averaged $66 million.

At that time, a lender could sell all his VA mortgages and half his FHA mortgages to Fannie Mae. Added restrictions will cut down that volume some. But Fannie Mae officials have no idea what the purchases will amount to from September on.

Ever since the 1952 Housing Act was signed July 14, the Fannie Mae Board (Raymond M. Foley, President) has been working on a formula for opening up non-defense purchases. The board approved the formula at its last meeting.

Fannie Mae disclaims any political implications, but resumption of purchases will help the mortgage market during the two months before elections.

Fannie Mae has total mortgage purchase authorizations (for FHA and VA paper) of $2.75 billion, plus $900 million for advance commitment of defense housing, or $3.65 billion in all.

Holdings in its mortgage portfolio at the end of July amounted to $2,064 million.

Mortgage purchases in recent months have been low—a total of $17 million in the three months of May, June and July.

Sales in those same months totaled $13½ million. For the last year, sales by Fannie Mae have been running $3 to $5 million a month.

First contracts let for Feather River

The California Division of Water Resources, with $800,000 to spend on plans and specifications for the proposed billion-dollar Feather River project, has let two contracts for preliminary work.

Lefever & Bing, general contractors of West Sacramento, Calif., were awarded a $92,000 contract for exploration work at the proposed Oroville dam site near Oroville. The work includes the driving of 2,000 feet of tunnel to test foundation conditions.

An aerial mapping of the area will be done by Vern W. Cartwright and Allen Wolff, Sacramento, Calif., photography firm. The cost to the state will be $59,910. The mapping will include the area to be inundated and surrounding districts. If the dam is built, the state will be faced with the task of rerouting railroad lines and a state highway.

Construction of the Feather River project by the issuance of revenue bonds has the support of Gov. Earl Warren's administration. The legislature voted the $800,000 for the studies and plans for the Oroville dam and power plant. The plan envisions the transporting of water to southern California.

Plan iron, coke project to cost $21 million

A $21-million iron and coke company project is being planned for St. Clair, Mich., on the St. Clair River about 35 miles north of Detroit.

The project will be built by the newly organized Michigan Iron & Coke Co. When in operation, the plant will produce 300,000 tons of merchant pig iron and 350,000 tons of coke annually.

The 800-acre site at St. Clair offers ready access to water, rail or highway shipping. Foundries in Flint, Saginaw and other Michigan cities are expected to benefit from lower freight costs.

The Defense Production Administration has granted a Certificate of Necessity for fast tax write-off.

Public works program outlined in San Antonio

City Public Works Director J. L. Dickson has proposed $37.9 million worth of capital improvements for San Antonio, Tex., but the City Manager, C. A. Harrell, hastened to add the figure is highly tentative.

The public works program urged by Dickson would stretch over five or six years if the bonds are approved. Included are sewer improvements and extensions, $24.4 million; paving, $6.7 million; sewer plant additions and improvements, $3.9 million; traffic signal modernization, $905,000; bridges, $710,490; public works headquarters, $542,500; garbage trucks, $700,000; and sanitary fill equipment, $150,000.

The sewer funds include $18 million for storm drainage. Sewer plant addition funds would go for a new 30-million gallon-per-day plant to augment the present one. The paving allotment includes $3.3 million for a city-wide project with property owners sharing in the cost. The bridge figure includes five separate spans.

NPA clarifies construction outlook

The pattern of construction during the months ahead continued to unfold last week as the National Production Authority simultaneously: (1) Announced commitments of materials for use in this quarter, covering 184 new industrial plant projects and costing $266 million. (2) Warned that many new projects, such as store and office buildings, churches, municipal and recreational buildings on which work has not been started may have to be deferred until 1953.

NPA's construction program is heavily weighted with defense projects. Its latest approvals include 47 chemical projects costing $81 million; five pulp and paper projects costing $50 million; 32 industrial and agricultural projects costing $35 million; six textile projects costing $32 million. These are in addition to previous allotments for 830 plant expansion projects to cost more than $1 billion.

The largest single projects in the new list are: Bowaters Southern Paper Co., Charleston, Tenn., $48 million; Carbide and Carbon Chemical Co., Spray, N. C., $30 million to produce dynel fiber; and Allis Chalmers Manufacturing Co., Springfield, Ill., $14 million to produce earth-moving equipment.

Other major projects are:

Aluminum Company of America, $2.2 million for aluminum production, La Fayette, Ind.; American Cement Corp., Harleyville, S. C., $6.3 million for portland cement; Dragon Cement Co., Northampton, Pa., $2.3 million for portland cement; Allied Chemical and Dye Corp., Buffalo, N. Y., $4.7 million; Columbia-Southern Chemical Co., New Martinsville, W. Va., $2.2 million for benzene; Davison Chemical Corp., Ridgewood, Fla., $12.4 million for phosphoric acid, uranium and phosphates; Diamond Alkali Co., Houston, Tex., $8.7 million for chlorine. General Tire and Rubber Company, Calvert City, Ky., $6 million for vinyl chloride and polymers; Koppers Company, Inc., Port Arthur, Tex., $8.7 million for ethylene oxide and other chemicals.

National Petro-Chemical Corp., Tuscola, Ill., $9.1 million for alcohol and chloride; Rohm and Haas, Houston, Tex., $3.8 million for phenol and acetone; Stauffer Chemical Co., $3 million for chemical production in Tolle County, Utah; Union Carbide and Carbon Company, $5 million for phenol production at Marietta, Ohio; Virginia Carolina Chemical Co., $4.5 million for production of phosphoric acid and phosphates at Nichols, Fla.; Line Material Co., East Stroudsburg, Pa., $2.3 million for pole line hardware; Collins Radio Co., Cedar Rapids, Ia., $2.1 million for electronics research and development; Radio Corp. of America, $3.5 million for production of electronic tubes at Lancaster, Pa.

General Motors Corp., $2.3 million for automobile assembly at South Gate, Calif.; General Motors Corp., $4.5 million for production of auto bodies at Lansing, Mich., and $2.2 million for production of bearings at Maywood, Ind.; Linton Plywood Association, Portland, Ore., $1.9 million, for softwood plywood and veneer; Saco-Lowell Shops, Saco, Me., $8.3 million for facilities to produce .50 caliber machine guns; Westinghouse Electric Corp., $10.8 million for production of electric meters at Bound Brook, N. J.; Union Carbide and Carbon Co., $2.3 million for production of concentrates at Hastings, W. Va.

Because of the lag in steel deliveries after the steel strike, NPA has notified builders that allotments made for the present quarter will remain valid for shipments up to Dec. 1, instead of expiring on Oct. 1. Fourth quarter allotments will be good through February, 1953.

Meanwhile, the Defense Materials Procurement agency announced that it has approved 436 projects during the year ended June 30, to increase domestic production of needed metals and minerals. The figure does not include new projects in the aluminum expansion program. Administrator Jess Larson said the projects involved a total of $672 million.

• **Conversion steel**—Builders with authorized construction schedules can now buy 500 tons of carbon conversion steel for the fourth quarter of 1952 and an additional 500 tons for the first quarter of 1953 without charging it against their quarterly allotments.

The new ruling, issued by the National Production Authority, under Direction 7 to CMP Regulation 6, does not apply to amusement, recreational, or entertainment projects.

Nor does the new ruling apply where the amount of conversion steel exceeds 40% of the purchaser's quarterly allotment.

NPA said that builders who have submitted their applications for more than 500 tons of conversion steel will start receiving their authorizations around Sept. 2.

Builders requiring more than 500 tons of conversion steel per quarter will have to submit applications for authority to buy to the Iron and Steel Division of the National Production Authority at Washington, D. C.

Conversion steel bought under the new direction is not subject to inventory restrictions, NPA said, and builders are not required to include such steel in computing their inventories.

California to vote on school program

California voters will ballot in November on a proposed state constitutional amendment authorizing issuance of $185 million in bonds to provide funds for additional state loans to go to localities for school construction.

The bond measure was part of compromise legislation approved at a special session of the legislature. Under the compromise, $20 million will be appropriated immediately from the general fund for schools which need funds urgently.

Another $20 million will be made available from the bonds next May, then $5 million a month until the bonds are all sold.

• **Must pay it back**—Under the California legislation, schools seeking state money for multi-purpose rooms will be required to pay back over a period of 40 years that portion of their loan used for multi-purpose rooms. The repayment period for classrooms is 30 years.

The construction money legislation provides that if the bond issue is approved by the voters, the $20 million from the general fund will be repaid from bond proceeds if necessary to maintain a June 30, 1953, treasury surplus of $5 million. If that is unnecessary, then only $165 million worth of bonds will be sold.

All funds have been allocated from a $250-million state bond issue voted in California in 1949 to aid localities in meeting their school construction needs.

Housing sites approved

The Davidson County (Tennessee) Planning Commission has approved subdivisions with a total of 1,193 building sites for new residences, which, when completed, will be valued at more than $16-million.

VA hospital program nears end

The Veterans Administration's fiscal 1953 hospital program got underway last week when it opened bids for a 1,000-bed hospital in Los Angeles.

Apparent low bidder was the Gust K. Newberg Construction Co., Chicago, Ill., with a bid of $17.9 million.

The Los Angeles hospital represents 50% of the VA hospital program for this year since Congress appropriated money enough for only two new hospitals—the Neuropsychiatric Hospital in Los Angeles and another 1,000-bed neuropsychiatric hospital in Cleveland.

VA originally planned to start five new hospitals this year; four of them atom-bomb blast resistant (ENR Feb. 14, p. 83). But Congress, after first cutting out all new hospitals, finally gave money enough for just two. The Cleveland hospital will be of the blast-resistant type.

• **Cleveland plans ready**—Firm plans have been drawn for the Cleveland project but no bid opening date has been set. Educated guesses place the bid opening date for sometime late this year or early in 1953.

The three blast-resistant hospitals that have been deferred are: a 1,000-bed neuropsychiatric unit in San Francisco; a 500-bed general hospital in Cleveland; and a 500-bed general hospital in Washington, D. C.

• **Design requirements**—The design for the blast-resistant hospitals calls for: (1) Reinforced concrete walls and roof 12 inches thick for the core of the general hospitals and for the core of the general medical building at the neuropsychiatric hospitals. (The general medical building is the principal structure at an NP hospital, which consists of a dozen scattered buildings for use of patients, plus nurses, quarters and utility buildings.) The core is 56 by 112 ft in plan and encloses the elevators and a continuous stairway, as well as a varied number of general service rooms on each floor. (2) Connecting corridors to outlying buildings at NP hospitals to be placed underground and covered with three feet of earth where practical. Topography of the site sometimes makes underground corridors impractical.

The program was first conceived in 1943 when military and VA officials started worrying about the flood of veterans returning from the wars.

Ground-breaking for the first postwar hospital got underway in 1945, in Tomah, Wisconsin. This hospital was opened in March, 1947. Since that date VA has completed 42 hospitals, with more being completed every month.

Since the program started VA has spent or obligated $766 million for bed-producing projects, i.e., new hospitals and additions. It has also spent or obligated $15 million for major rehabilitation and modernization projects to bring old outmoded hospitals up to date.

Last year the Navy spent $325 million.

But large as this program is, it isn't as large as the one originally planned for by VA. In January, 1949, President Truman sent a message to the budget calling for a reduction of 16,000 beds in VA's program. This reduction meant cutting out 24 projects completely and reducing in size 14 others.

This reduction cut VA's program from 90 projects to 66 with a total bed capacity—in new hospitals—of 35,620. If additions to hospitals are included, the total rises to 49,483, of which 31,252 are available now. In anticipation of a rush of patients, VA assigned 44 hospitals to the Corps of Engineers for fast construction. The Engineers have completed 37 of the projects and have 7 more nearing completion.

• **Criticism**—VA's big hospital program hasn't escaped criticism. One frequent criticism charges political favoritism in the location of some VA hospitals. No one in Washington denies that politics influences any government program, but VA officials point out that every state in the union, plus Washington, D. C., and Puerto Rico, has at least one VA hospital. As for grouping hospitals in one area or one state, VA men point out that a hospital needs doctors and nurses, and doctors and nurses don't want to leave the large cities. They prefer to be within commuting distance or, at the most, within a few hours of a large center of population. This explanation does not satisfy states without large cities, but it is one of the practicalities that the administrators face.

Is VA going to expand its hospital program to take care of Korean veterans?

VA doesn't know, at least it isn't saying. The favorite answer: "Ask Congress." Some officials think that more hospitals should be in the planning stage, if not under construction. But these officials now say, "What is the use of planning for the future if Congress won't vote funds for hospitals it has already approved?"

Turnpike launched

High atop the gorge of West Virginia's Bluestone River there was an air of serenity as final preparations were made for ground-breaking rites scheduled Aug. 29 to signal the beginning of work on the state's 88-mi expressway connecting Charleston and Princeton.

But in the offices of the West Virginia Turnpike Commission there was little peace. The commission was mulling over the claims of asphalt and concrete interests who last week appeared to present their cases in another round of their battle for paving supremacy.

Use concrete for the toll road, argued the Portland Cement Assn. of Chicago, and West Virginia will save $4.5 million.

Use asphalt, replied the Asphalt Institute of New York, and the state will save $1.5 million in its initial cost.

Concrete seemed to have the upper hand last week, with powerful support from management and labor representatives of the state's coal industry, who envisioned 25,000 man-days of employment for miners should concrete be chosen.

The commission said a decision would be made in a month or two.

A contract for construction of the first 1.8-mi section of the turnpike was awarded to C. E. Wetherall and Co. of Huntington. Contract included grading, draining and building a bridge substructure.

Paseo Bridge underway

Construction was underway last week on the $16-million Paseo Bridge across the Missouri River (ENR May 1, p. 26) despite the fact that the bonds to finance the project have not yet reached the market. The self-anchored, suspension-type bridge will link Kansas City with North Kansas City.

Florida groups want better concrete

Two south Florida engineer groups have teamed up with building officials to work for stricter enforcement of building codes and higher construction standards.

Committees have been appointed by the Miami chapter, Florida Society of Professional Engineers, and Professional Engineers Association of Southeast Florida. These groups will work with the Building Officials Committee of Dade County.

Action followed a joint meeting of the three groups Aug. 14.

At the meeting, George E. Wingerter, head of a Miami testing laboratory, reported that recent tests of concrete being supplied to several construction jobs in south Florida showed the concrete was below standards established by the American Concrete Institute.

Engineers were told they were as much to blame as building inspectors when sub-standard material or workmanship goes into their buildings. This assertion was made by George R. Headley, chairman of the Building Officials Committee. Headley is also a general contractor.

"Engineers should supervise their jobs more closely," Headley said, "and not depend altogether on overburdened building inspectors to enforce their designs."

He said that when the tests mentioned by Wingerter came to the attention of the Building Officials Committee, its members went to work on contractors, concrete suppliers and building inspectors to prevent such incidents from recurring.

• **Reach agreement**—Headley said concrete suppliers agreed to these rules: Not to add water to the mix after it has been made; to deliver concrete to the job not more than 1½ hours after water is added; to be more alert in choice of aggregate; and to adhere to A.C.I. standards.

This agreement went into effect Aug. 1.

Engineers were urged to attend a two-day school on concrete-making to be sponsored jointly by the Building Officials Committee and the Miami Builders' Exchange. Instruction and exhibits were furnished by the Portland Cement Association.

All general contractors and their superintendents and foremen were also invited.

"It is important in south Florida, where design concrete is the predominant building method, that all of us in the construction business know more about it," Headley said.

G. R. HEADLEY—Building inspectors don't replace engineers.

"We've had some failures in this area that wouldn't have happened if those of us who design, engineer and erect these buildings knew what we ought to know about concrete," Headley added.

Headley reminded the engineers that it is not the building inspector's job to check the quality of either steel or concrete that goes into a structure—that the inspector merely checks the size and fabrication to see that it meets code requirements.

Guy James-Wunderlich offer low bid on Tiber Dam

Guy N. James Construction Co., of Oklahoma City, and Wunderlich Contracting Co., of Omaha, Neb., bidding jointly, submitted the apparent low bid of $12.8 million for construction of the Tiber Dam and dike on the Marias River in north-central Montana (ENR Aug. 7, p. 103). Ten bids were submitted, ranging from the apparent low of $12.8 million to a high of $18.9 million.

The project will be an earth-fill structure rising 196 ft above the streambed; crest length of 4,300 ft.

Site changed again for chemical plant

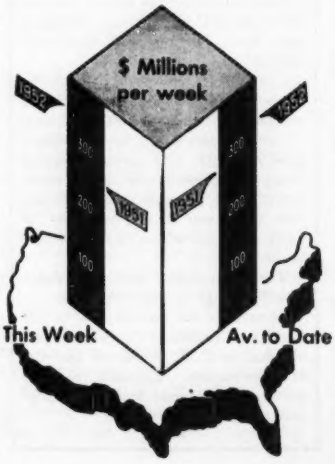
A $15.4-million chemical plant, originally planned for New Orleans, will be built instead in Memphis, Tenn., the Defense Production Administration announced last week.

W. R. Grace & Co. obtained a Certificate of Necessity for fast tax write-offs last March. The plant will produce anhydrous ammonia.

Since issuance of the certificate, the company has twice notified DPA of a change in site—first to St. Louis, Mo., and now to Memphis.

Activity This Week

As reported to ENR (in millions of dollars)



Contracts by type of work

	This Week	Cumulative 35 wks. 1952	1951	% chge
Waterworks	$3.3	$155.4	$150.0	+4
Sewerage	6.2	197.6	213.9	−8
Bridges	7.9	262.3	222.5	+18
Highways	41.2	1,054.4	807.8	+31
Earthwork, waterways	4.4	347.6	354.1	−2
Buildings:				
Public	31.0	3,551.9	1,572.6	+126
Housg., pub.	3.2	489.3	551.6	−11
Housg., priv.	66.4	2,042.6	1,334.4	+53
Commercial	12.3	411.2	464.8	−12
Industrial	148.9	1,890.2	2,876.8	−34
Unclassified	29.1	901.4	1,258.8	−28
Total	**$353.9**	**$11,303.8**	**$9,807.3**	**+15**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost	Aug.	583.69	280.58	122.36
	July	570.65	274.31	119.63
Bldg. cost	Aug.	422.36	228.32	120.06
	July	414.46	224.04	117.81
Volume	July	504	367	261

Business briefs . . .

• **AGC index rises**—The Associated General Contractors construction cost index for July rose to 391, up 9 points over June (1913 equals 100). Last month's index reading was up 12 points over the July, 1951 figure.

• **Building materials higher**—The Bureau of Labor Statistics' July index for wholesale prices of building materials was 118.0, up 0.2 from June. In the index, 1947-49 equals 100.

• **Cement output declines**—Total output of 20.7 million barrels of finished portland cement in June was 6% under last year's figure as reported to the Bureau of Mines. Mill shipments totaled 25 million barrels, a 1% increase over 1951, while stocks of 18.9 million barrels were 14% higher than at the same time a year ago.

• **Clay products up**—An 8% rise in the value of shipments of clay construction products for 1951 was recorded by the Census Bureau. Largest percentage increases occurred in the value of shipments of hollow facing tile and glazed and unglazed floor and wall tile, each up 16% over the previous year. The only product which decreased in the value of shipments was unglazed structural tile, down 5% to $14.1 million in 1951.

• **Aluminum at record rate**—The U. S. aluminum industry produced 17% more during the first half of 1952 than it did in the first six months of 1943, peak production year of World War II, the Aluminum Association announced. June primary production of 154.9 million pounds brought the six-month total to 923.1 million pounds, an increase of 14½% over the same period last year and almost 13% more metal than the entire industry turned out in the year 1946.

• **Money-saving plan**—Pennsylvania voters will decide Nov 4 whether to pave the way for possible liquidation of the Commonwealth's borrow-and-build agencies. The proposed constitutional amendments will be included on the ballot to permit the Commonwealth to sell $215 million in bonds to replace issues sold by the two authorities. Behind the plan is the idea that the bond holders would ask for an interest rate on Commonwealth funds cheaper than the 1.74% and the 1.84% now received on General State Authority bonds. In 1947 Commonwealth got 1.27% on a $50-million construction bond issue.

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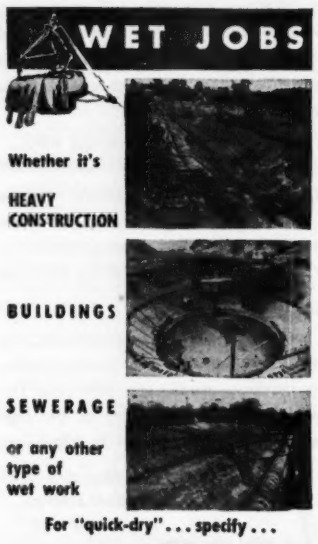

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UNIT PRICES

Widening and resurfacing of Georgia highway

To cope with heavy truck travel, the Georgia State Highway Department is widening 11.8 mi of pavement on US Rt 411 with penetration macadam, then surfacing it with plant mix asphalt binder and asphaltic concrete. The bid for the macadam pavement was only 1% below the alternate, black base.

M. L. Shadburn is the state highway engineer.

Hourly wage rates for skilled labor are $1.50; for semi-skilled, $1.25; and for unskilled, $0.85.

Work began in May and must be complete in 300 working days. Bidders for the work include the following:

1C Ledbetter-Johnson, Rome, Georgia	$779,107
2 W. L. Cobb, Decatur, Georgia	797,141
3 E. A. Hudson's Sons, Bolton, Georgia	814,008

Bids: 5-9-52 Items	Unit	Quantity	Unit prices 1 C	2
Clear & grub	ls	1	$10,000	$22,000
random	ac	5	100	200
Exc, uncls & borrow	cy	124,849	$0.485	$0.49
overhaul	sta y	387,849	0.005	0.005
Ex, channel	cy	800	1.00	1.25
culv & minor struct	cy	1,057	2.75	2.50
Conc pipe, cls B, SD, 15"	lf	935	2.00	2.25
18"	lf	803	2.65	3.00
24"	lf	316	3.90	4.50
30"	lf	70	5.30	6.00
SD ext, 15"	lf	98	3.00	3.50
SD ext, 18"	lf	46	3.65	4.50
SD ext, 30"	lf	30	6.50	7.00
CMP, 16 ga., SD ext 15"	lf	88	2.75	3.50
18"	lf	60	3.60	4.50
14 ga., 30"	lf	16	6.75	7.00
SSRCP, S.D., 36"	lf	90	6.75	8.00
st., 15"	lf	15	2.60	3.50
CD, 18"	lf	740	3.50	3.50
stub & long, 18"	lf	801	3.25	3.50
Bit ctd CMP, 16 ga, CD, ext, 15"	lf	15	3.75	5.00
18"	lf	98	5.00	5.00
14 ga., 24"	lf	184	7.00	7.00
14 ga., 30"	lf	74	8.50	8.00
10" L, 14 ga., 24"	ea	1	40.00	45.00
Conc headwalls & pipe plugs class B	cy	15	44.00	50.00
Conc culv, class A	cy	1,082	55.00	67.00
Bar reinf steel	lb	76,611	0.13	0.13
Conc drop inlets std 1019, type E H. 4' or less	ea	10	145.00	200.00
additional depth	lf	1.5	20.00	25.00
mod for connect to culv	ea	2	145.00	150.00
Conc drop inlets std 1019 type B, H. 4 or less	ea	2	135.00	150.00
Drop inlet grate, std 1019	ea	1	18.00	75.00
Conc drop inlet adjusted to grade	ea	1	35.00	75.00
Culv pipe relaid, CD or SD	lf	650	1.00	1.50
Plain sand cmt bag riprap	sy	83	5.50	6.00
Sod ditch checks	sy	707	0.90	0.80
Water for grassing	M gal	0.7	2.00	2.00
Fertilizer, 1st application	t	0.14	$100.00	$100.00
2nd application	lb	7	1.00	1.00
Rem conc culv, cls A	cy	317	15.00	20.00
Perf conc pipe undr, 6"	lf	4,000	1.50	2.25*
Sand for subgrade	cy	1,088	1.00	1.10
Chert for subgrade	cy	25,998	0.55	0.55
Overhaul on subgrade	uy	648,124	0.035	0.04
Conc R/W markers	ea	119	5.00	5.00
remove	ea	29	1.50	2.50
reset	ea	29	2.50	2.50
Posts for FAP markers	ea	2	15.00	15.00
Plates for FAP markers	ea	2	15.00	15.00
Arrows for FAP markers	ea	2	15.00	15.00
Sal mat'l bkfill, culv fndn	cy	310	4.50	3.00
Conc spillways, std 9035 type A	ea	4	150.00	125.00
type B	ea	6	150.00	125.00
type 4	ea	1	100.00	125.00
Conc slope drain	lf	48	3.00	3.50
Base & surf rem & stockpile	cy	2,083	0.75	0.55
Subgr treat mat'l removed from stockpile	cy	2,706	1.00	0.55
Conc steps, cls B, incl reinf. stl.	cy	13	65.00	70.00
Rem concrete sidewalk	sy	4	0.25	1.10
com curb & gut, 6"x30"	lf	41	0.75	1.10

Bids: 5-9-52 Items	Unit	Quantity	Unit price
Rem conc pavement	sy	6,386	0.60
raised edge curb		10,907	0.15
Seeding	sy	181,457	0.06
Sand underdrains	lf	3,400	0.80
Crusher run limestone base	t	26,994	3.50
Cutback asph tack coat	gal	18,550	0.18
Cutback asph prime	gal	46,429	0.18
Binder, B - incl level-hot	t	18,953	5.70
Asph conc E	t	9,993	5.60
mat'l AC-8	gal	457,896	0.138
Sel mat'l, shldr constr	cy	35,378	0.51
overhaul	uy	902,302	0.35
Finishing & dressing	sy	133,237	0.03
Conc valley gut with curb, 8"	sy	188	4.00
Comb conc curb & gut, 6"x30"	lf	106	2.50
Concrete sidewalk, 4"	sy	1,831	2.85
Conc sidewalk, 6"	sy	196	4.00
Conc gut with raised edge, 6"x30"	lf	3,072	1.90
Subgrade	sy	38,800	0.20
Reinf conc app slabs	sy	213	9.00
Agg, pen mac pavement	t	21,410	$3.60
bit mat'l	gal	350,687	0.15
Alternate			
Black base	t	21,410	5.20
bt Mat'l	gal	299,740	0.128

*Bid based on cm pipe

Fishways, Columbia River Washington and Oregon

A contract for fish ladders at the McNary Dam, Columbia River, Washington and Oregon was awarded this month by the Corps of Engineers, Walla Walla District. The award was split between the two bidders, with $629,238 going to the low bidder and $108,700 to the high bidder, for a 4% reduction from the amount of the original low bid.

Work consists of furnishing and installing all equipment for the fish passing facilities, including 12 lifting beams, 14 tilting weirs, 13 telescoping weirs, and two counting houses.

The Washington shore fishway is located adjacent to and riverward from the navigation lock. The Oregon shore fishway is located landward from the powerhouse.

The project must be complete by March, 1953. Bidders include:

LB Willamette Iron & Steel Co., Portland, Ore.	$768,183
HB Premier Gear & Machine Works, Inc.	1,129,164

Bids: 6-3-52 Items	Unit	Quantity	Unit prices LB	HB
Weir operating machinery tilting	ea	14	$5,950	$7,500
telescoping	ea	13	11,427	16,750
holding pool	ea	1	9,340	11,000
high pres fishlock swing & exit shaft	ea	1	1,912	2,300
Count station oper mach	ea	2	12,770	11,700
High pressure fishlock weir hoist machinery	ea	6	1,584	1,800
Fishlock flume gate oper machinery	ea	1	1,516	1,900
Counting house	ea	2	3,847	3,320
Lifting beams	lb	15,500	$2.25	$1.20
Tilting weirs	lb	92,000	0.46	0.95
Telescoping weirs	lb	202,000	0.314	0.70
Gates and screens	lb	20,000	0.787	1.20
Bulkheads, trashracks, bypass cut-off plates, and exit shaft weir	lb	33,000	0.49	0.76
Picketed fish leads & portable grating	lb	480,000	0.365	0.67
Fish count stations & high pres fishlock fishtrap	lb	33,000	0.492	0.70
Stop logs	lb	225,000	0.366	0.31
Bronze seals	lb	980	3.15	3.25
Rubber & belt seals	lb	335	7.40	13.25
Treat lumber, stop logs	Mfbm	47,500	0.382	0.36
Untreated lumber	Mfbm	1,000	1.317	2.15
Concrete in stop logs	cy	26	137.50	125.00

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager — ***J. A. MAHONEY, Reports*** — ***M. R. ROESSLER, Statistics***

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

MASSACHUSETTS—B.A. 9/2—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Chicopee-West Springfield—bridge repairs. Plans deposit $5. P. H. Kitfield, ch. engr.

Massachusetts—B.A. 9/2—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, drainage work William St. and Dodge Ave., Pittsfield. Plans deposit $5. P. H. Kitfield, ch. engr.

MASSACHUSETTS—B.A. 9/2—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Quincy—resurf. Sea St. Plans deposit $5.

Springfield—hy. work Berkshire Ave. and Carew St. Plans deposit $10.

Williamstown—state hy. reconstr. Pownall Rd. Plans deposit $5. P. H. Kitfield, ch. engr.

Massachusetts—TRAFFIC SIGNAL—B.A. 9/2—Commonwealth of Mass. ,Dpt. P. Wks., 100 Nashua St., Boston, installing traffic signal, Quincy. Plans deposit $5. P. H. Kitfield, ch. engr.

Mass., Boston—B.A. 9/4—City, Dpt. P. Wks., City Hall Annex, concrete deck Broadway Bridge. $60,000. Plans deposit $2.

BIDS ASKED—BUILDINGS

Mass., Tewksbury—POWER PLANT—B.A. 9/5—State, Dpt. P. Walfare, 600 Washington St., Boston, power plant imprvs., incl. installing turbo generator, State Hospital. $90,000. Plans deposit $10. Hubbard, Lawless & Blakeley, 177 State St., Boston, engrs. CD 2/10/50.

▲ **Conn., Stamford**—SCHOOL—B.A. 9/8—City Bd. Educ., City Hall, 1 story, brick, steel, concrete Willard-Belltown Elementary School, Pepper Ridge Rd. $1,000,000. Plans deposit $35. CD 11/5/43.

▲ **Mass., Boston**—HOSPITAL—B.A. 9/12—State Dpt. P. Health, State House, Boston, Proj. P-N-8, chronic disease hospital and nurses home, Forest Hills, $11,-500,000. Plans deposit $100 refundable. M. A. Dyer Co., 24 School St., archt. Hayden, Harding & Buchanan, 810 Park Square Bldg., Boston, engrs. CD 7/25, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta,

Lee Brothers, Albion, Me. CA **$175,067**. conc. road 2.59 mi. Secondary Proj. S 0217 (2), 137 Belfast. Bids Aug. 13. CD 8/5.

▲† **John A. Volpe Constr. Co.**, 54 Eastern Ave., Maiden, Mass. LB **$2,843,343**. laboratory wing, misc. bldgs., heating plant, Cambridge Research Center, Eng. 9-016-53-11, BEDFORD, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Aug. 15. CD 7/23.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Etcoff Constr. Co.**, 1318 Beacon St., Brookline, Mass. LB **$1,361,000**. SCHOOL, bounded by Providence, Milton and Butler Sts., LAWRENCE, MASS. City, City Hall, Lawrence, Mass. Bids Aug. 13. CD 7/29.

▲ **A. Cefalo & Sons, Inc.**, 42 Bennett St., Lynn, Mass. LB $1,987,000. High SCHOOL, Oakland Rd., READING, MASS. Town, School Comn., Reading, Mass. Bids Aug. 14. CD 7/11.

▲ **Giordano Constr. Co.**, 287 Main St., Branford, Conn., LB, **$1,087,000**, MR-46 HOUSING, WALLINGFORD, CONN., Borough of Wallingford Housing Auth., Wallingford, Conn. Bids Aug. 11. CD 8/5.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., Brooklyn—TRACKS, etc.—B.A. 9/4—Bd. Transportation, 370 Jay St., Zone 1, installing tracks and incidental work, furnishing materials, paving and removal of tracks for South Brooklyn Railway Freight Yard.

BIDS ASKED—BUILDINGS

N. Y., Great Kills—LIBRARY—B.A. 9/3—Dpt. P. Wks., Municipal Bldg., Zone 7, general constr.; plumbing, heating and ventilating, electrical work and lighting fixtures for constr. of Great Kills Branch Library, Giffords Lane and Margaret St., Richmond Boro. Plans deposit $25.

N. Y., New York—LIBRARY—B.A. 9/3—Dpt. P. Wks., Municipal Bldg., Zone 7, general constr., plumbing, heating and ventilating, electrical work and lighting fixtures for constr. Mosholu Branch Library, 205 St. between Perry and Bainbridge Aves., Bronx Boro. Plans deposit $25. CD 8/20/45.

▲ **Md., Baltimore**—SCIENCE—B.A. 9/4—State, Dpt. P. Imprvts., 506 Park Ave., Zone 1, 4 story, reinf.-con. science bldg. Morgan State College. $1,045,000. Plans deposit $50. Hall, Border & Donaldson, 2514 St. Paul St., archts. CD 10/12/51.

† **Md., Edgewood**—TEST CHAMBER—B.A. 9/6—U. S. Eng., 24 St. and Maryland Ave., Baltimore, Zone 18, 39x132 ft. 53x78 ft. low temperature test chamber, laboratory, offices, repair shop, outside utilities, Army Chemical Center. $750,000. Plans deposit $10. S. Yearly Smith, Inc., 2114 Maryland Ave., Baltimore, engr. and archt. CD 8/11.

▲ **Pa., Pittsburgh**—NURSES HOME—B.A. 9/16—St. Josephs Hospital, 2117 E. Carson St., 5 story, bsmnt., 114x120 ft., brick, block, steel f., nurses home. $1,000,000. McMullen, Pringle & Swen, 217 Ninth St., archts. CD 3/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Wortman & Sons, Inc.**, 109 E. 29 St., New York, N. Y., LB, **$1,162,338**, superstructure of Hangar 6 at New York International Airport, IDLEWILD, N. Y. Port of New York Auth., 111 8 Ave., New York, 11, N. Y. Bids Aug. 11. CD 7/31.

M. Meinick & Co., Inc., 225 Willow Ave., New York 54, N. Y., LB, **$112,713**, Contract UR-duct lines for White Plains Rd. Line, Westchester Ave. near Simpson St., Bronx Boro, NEW YORK, N. Y. Bd. Transportation, 370 Jay St., Brooklyn, 1, N. Y. Bids Aug. 7. CD 7/15.

† **Barrett Roads Corp.**, Lakehurst, N. J., LB **$198,163**, grading, paving, storm drainage, water distr. sys., sanitary sewerage system, etc. FORT DIX, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. Fridy, Gauker, Truscott & Fridy, 1321 Arch St., Phila. Pa., archts.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,

Francis A. Canuso & Sons, 173 W. Roosevelt Blvd., Phila., Pa., LB **$1,119,970**, constr. 14,060 ft. rein.-con. pavement 33 ft. wide, with bit. surf. crushed aggregate base, widfn. West Chester Pike, Delaware Co. Bids Aug. 15. CD 7/30.

O. H. Martin Co., 18 First St., Sharpsburg, Pa., CA **$426,130**, est. $608,846, sewage disposal plant, TYRONE, PA. Tyrone Sewer Auth., Tyrone, Pa. CD 7/2 under LB.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Empire Constr. Co., 31 S. Calvert St., Baltimore, Md. LB **$76,948**. steel I-beam bridge to carry Baltimore Harrisburg Expressway over Quaker Bottom Rd., 3 span 28 ft., 48 ft., 21 ft., concrete piers, abutment, Contr. B 578-17-415, Baltimore Co. Bids Aug. 12. CD 8/1.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Nello L. Teer, Durham, N. C. CA **$819,572**, grading, drainage, paving 2.036 mi. north bound lane of Baltimore Harrisburg Expressway, Contr. B-578-18-415, Baltimore Co. CD 8/5, under LB.

† **Landscape Engineering Corp.**, Merryfield, Va. LB **$219,461**. landscape and approach work at National Institutes of Health, Proj. 18-063, BETHESDA, MD. General Services Admin., Public Bldgs., Service, 19 and F. Sts. N. W., Wash., D. C. Bids Aug. 12. CD 7/18.

Bass Constr. Co., 215 Birmingham Theater Bldg., Birmingham, Mich., LB, **$68,205**, general installation west suction piping, Bryant St. Pumping Station, Bryant St. N. W., WASH., D. C. Director of Sanitary Engineering, Dist. of Columbia, District Bldg., Wash., 25, D. C. Bids Aug. 12. CD 7/28.

▲ **Charles H. Tompkins Co.**, 907 16 St. N. W., Wash., D. C. CA, **$1,700,000**. 5 story radio and TV station, 40 and Brandywine Sts. N. W., WASH., D. C. WTOP Radio and TV Station, Warner Bldg., Wash., D. C. Faulkner, Kingsbury & Stenhouse, Ring Bldg., Wash., D. C., archts.

BUILDINGS

LOW BIDS AND CONTRACTS

D. Fortunato, Inc., 11 Garfield Ave., Floral Park, N. Y. CA, **$958,289**, general contract, elementary SCHOOL, PLAINEDGE, N. Y. Bd. Educ., Union Free School Dist. 18, Plainedge School, Plainedge, N. Y. Bids July 15. CD 7/9.

▲ **Walter Kidde Constructors**, 140 Cedar St., New York, N. Y., CA, Approx. **$2,500,000**. Design and construct pharmaceutical products PLANT, MORRIS PLAINS, N. J. Warner-Hudnut, Inc., 113 W. 18 St., New York, N. Y.

Anchor Constr. Co., 6 W. 23 St., Baltimore, Md. CA **$103,680**. 1½ story, 90x120x16 ft. WAREHOUSE, BALTIMORE, MD. Jos. J. Martin Co., 105 High St., Baltimore, Md.

† **John McShain, Inc.**, 17 and Spring Garden Sts., Phila., Pa. LB **$848,700**. APARTMENT Bldg. 20, National Institute of Health, Proj. 18-063, BETHESDA, MD. General Services Admin., Public Buildings Service, 19 and F Sts. N. W., Wash., D. C. Bids Aug. 12. CD 7/11.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **Louisiana**—B.A. 9/9—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, constr. Boyou Rigolette Floodgate, approx. 2½ mi. north of Alexandria, Rapides Parish, Inv. No. 53-17. CD 8/13, under LB.

† **Va., Norfolk**—TRANSMITTER FACILITIES—B.A. 9/23—Dist. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, radio transmitter facilities at U. S. Naval Communication Station, Spec. 32847. Plans deposit $150.

HEAVY CONSTRUCTION

BIDS ASKED—HEAVY CONSTRUCTION

† **Vanguard Constr. Co.**, P. O. Box 1894, Norfolk, Va. LB $165,108. site preparation, utilities for electronics and ordnance shop, Norfolk Naval Shipyard, NOY 74855, Spec. 35781, PORTSMOUTH, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids Aug. 12. CD 7/25.

▲† **Wise Contg. Co.**, 8 and Grace Sts., Richmond, Calif., LB **$2,397,000** addn. aviation and fleet fuel storage at Naval Supply Center (Naval Schools Mine Warfare) NOY 72465, YORKTOWN, VA. Dist. P. Wks. Officer, Fifth Naval Dist., Norfolk, 11, Va. Bids Aug. 12. CD 7/22.

ALABAMA—State Hy. Dpt., Montgomery,

C. G. Thompson & M. H. Rowell, Guin, Ala., LB, $72,969 bridge from Pickensville to Mississippi State Line Pickens Co.;

Goodwyn & Murphree, Troy, Ala., LB, **$70,353**, bridges, Selma toward Prattville, Dallas Co.;

Ray Constr. Co., Mobile Hwy., Pensacola, Fla., LB, **$354,171**, bridge and approaches 0.925 mi. Fish River at Ala. Hy. 89, Baldwin Co.;

G. W. Norrell Contg. Co., Georgiana, Ala., LB, **$82,580**, bridge .091 mi. over Terrapin Creek south of Centre, Cherokee Co. Bids Aug. 8 CD 7/28.

▲ **ALABAMA**—State Hy. Dpt., Montgomery,

A. L. Crow Constr. Co., Selma, Ala., LB **$182,039** bit. 6.014 mi. from Vineland to Pine Hill, Marengo and Wilcox Counties; LB, **$84,105**, bit. 22.522 mi. county road from Twin north toward Hamilton and from Hackleburg south Marion Co.;

E. J. Cobb Constr. Co., 1925 Mobile Rd., Montgomery, Ala., LB, **$83,670**, base, bit. 10.784 mi. road from Ala. Hy. 79 through Half Acre and Aimwell to Ala. Hy. 10, Marengo Co.;

Harbert & Cargile, Inc., Monroe Park, Mobile, LB, **$84,752**, bit. 2.187 mi. U. S. Hy. 80, Uniontown south and west to Marengo Co. line, Perry Co.;

S. T. Shepard Constr. Co., 4134 Terrace Rd., Birmingham, Ala., LB, **$84,201**, base and bit. 7.797 mi. road from Snoddy to Jena, Greene Co.;

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects inviolved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

J. P. Maynard, Alexander City, Ala., LB, $156,997 base and bit. 9.529 mi. road from Jacksonville to Angel Station, U. S. Hy. 241, Calhoun Co.; LB, $96,670, base, bit. 12.585 mi. road from Omaha to Graham, Randolph Co.

Hewitt Contg. Co., Buena Vista Rd, Columbus, Ga., LB, $2,146,284, grading, drainage, pavement 5.805 mi. part of Montgomery-Birmingham Rd., Shelby and Jefferson Counties;

Burgreen Constr. Co., Athens, Ala., LB, $178,907, bit. 7.028 mi. from Hartselle to McKendry, Morgan Co.;

Raley Constr. Co., Aberdeen, Miss., LB, $148,895, grading, drainages 9.242 mi. from Pickensville to Mississippi State Line, Pickens Co.;

M. R. Thomason, Bell Bldg., Montgomery, Ala., LB, $287,056, bit. 4.718 mi. Selma toward Prattville Dallas Co. Bids Aug. 8. CD 7/28.

MISSISSIPPI—State Hy. Dpt., T. C. Robbins, dir., Jackson.

Hyde Constr. Co., Hy. 80 N., Jackson, Miss. CA $133,262. misc. work on approaches to bridge across Bay of St. Louis on U. S. Hy. No. 90 between Bay of St. Louis and Henderson Point, Hy. Toll Proj. No. 1 Contr. IV, Hancock and Harrison Counties. Bids July 22, awarded Aug. 12. CD 7/15.

MISSISSIPPI—State Hy. Dpt., T. C. Robbins, dir., Jackson.

Hyde Constr. Co., Hy. 80 N., Jackson, Miss. CA $336,924. paving, incidental grading, drainage on approaches to bridge across Bay of St. Louis on U. S. Hy. 90 between Bay of St. Louis and Henderson Point, Hy. Toll Proj. No. 1, Contr. III, Harrison and Hancock Counties. Bids July 22, awarded Aug. 12. CD 7/15.

Boh Bros. Constr. Co., 2400 Cypress St., New Orleans, La. LB $168,446. Contr. No. 161 W modification Basins G-1 and G-2, water purification plant, NEW ORLEANS, LA. Sewerage & Water Bd., 526 Carondelet St., New Orleans, La. Bids Aug. 6. CD 7/16.

† **R. P. Farnsworth & Co., Inc.,** 1515 S. Salcedo St., New Orleans, La. LB $229,770. Pumping Station No. 6, Michoud Ordnance Plant, Inv. No. 53-6, NEW ORLEANS, LA. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids Aug. 8. CD 7/9.

KENTUCKY—Commonwealth of Ky., Frankfort,

State Contg. & Stone Co., Hartford, Ky. CA $560,464. b. conc. surf. Class I 13.05 mi. Central City-Livermore Rd., F 368 (3), SP 75-202, 89-243, 89-263, McLean and Muhlenberg Counties. CD 8/12, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **O., Youngstown**—HOUSING—B.A. On Or About 9/11—U. S. Eng., 237 Fourth Ave., Huntington, 18, W. Va. family housing at Youngstown Municipal Airport, Serial No. ENG 46-022-53-5. Bids 6/26, rejected. CD 6/11.

O., Cleveland—B.A. 9/16—New York Central System, F. H. Simpson, ch. engr., 325 La Salle St. Station, Chicago, 5, Ill., substructure for reconstructing Big Four Bridge No. 2 over Cuyahoga River.

Ind., Indianapolis—B.A. 9/22—City, Bd. Sanitary Comrs., City Hall, primary sewage treatment units, $200,000. Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs. CD 7/22/43.

BIDS ASKED—BUILDINGS

Ill., Chicago—FACTORY—Bids Asked—Perfection Screw Products Co., 1105 S. Washtenaw St., 40,000 sq. ft. factory, 47 and Richmond Sts. $400,000. Mark D. Kalisher, 230 E. Ohio St., Chicago, 11, Ill., archt. CD 7/31.

Mich., Kalkaska—HOSPITAL—Bids Asked—Kalkaska County Hospital Bd. Trustees, Kalkaska, brick, steel hospital. $300,000. Lewis J. Sarvis, 258 Champion St., Battle Creek, archt. CD 7/17.

SOON LETS CONTRACT—BUILDINGS

Mich., Detroit—HOSPITAL—Women's Hospital, 432 E. Hancock St., soon lets contract 2 story, brick, steel hospital addn., E. Hancock St., $300,000. O'Dell, Hewlett & Luckenbach, 2300 Dime Bldg., Detroit, archts. CD 5/20.

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Philip O. Barnard, 2838 Addison, Houston 5, Tex.
Western Steel Prod. Co., 1758 W. 13th Ave., Denver 4, Colo.

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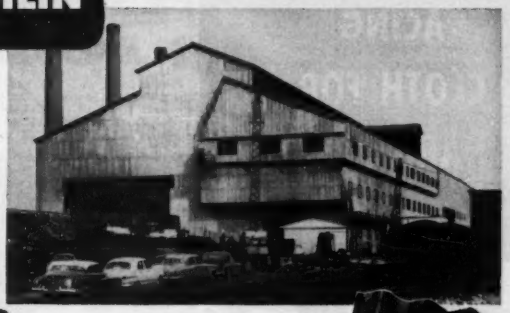

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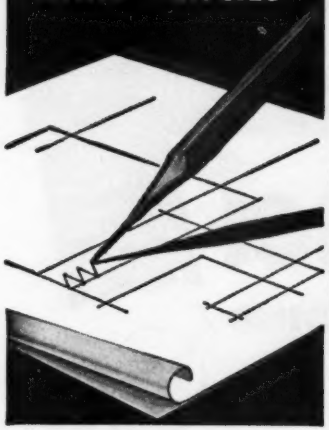

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Mich., Grand Rapids—SCHOOL—Immanuel Evangelical Lutheran Parish, 338 Division St. N., soon lets contract 2 story, brick, masonry school. $300,000. J. & G. Daverman, 924 Grandville St. S.W., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **H. W. Miller Constr. Co.**, 1511 Neave St., Covington, Ky., CA. **$748,500**, incinerator, all necessary appurtenances, paving approaches, grading, sewer, in Millcreek area north of Frick Rd.;

Nichols Eng. & Research Co., 70 Pine St., New York, N. Y. CA. **$513,830**, four incinerating units for new incinerator in Millcreek Valley, near Frick, Md., CINCINNATI, O. City, City Hall, Cincinnati, O. Bids June 15, awarded Aug. 12. CD 6/30.

▲ **MICHIGAN**—State Hy. Dpt., 222 Townsend St., Lansing, Zone 13.

Pierson Contg. Co., 609 Eddy Bldg., Saginaw, Mich., and **Louis Garavaglia**, 24240 Mound Rd., Center Line, Mich. CA. **$1,013,604**. c. conc. 12.957 mi. UX-25, CS 74-54 C3 (S 364 6), F 32-48 C2 (F 94 12) Part 2, F 74-47 C2 (F 94-12) Part 1, Huron and Sanilac Counties.

Midland Contg. Co., Midland, Mich. CA. **$518,313**. b. conc. surf. 23.288 mi. M-135, M-81, M 79-47 C4, Bay Co. CD 8/7, under LB.

University of Michigan, Harlan H. Hatcher, pres., Ann Arbor, Mich., cancelled bids to have been opened Aug. 19, swimming pool bldg., ANN ARBOR, MICH. CD 8/4.

Julius Porath & Son Co., 702 Transportation Bldg., Detroit, Mich. CA. **$179,842**. Group 52-13, c. conc. Audrey, Blackmoor, Davison, Greyfriars, Parkland, Pembroke, Stansbury, and Winston Sts., DETROIT, MICH. City, Carl D. Warner, comr. Dpt. P. Wks., Guardian Bldg., Detroit, Mich. Bids June 24. CD. 6/19.

Cooke Contg. Co., 1116 Penobscot Bldg., Detroit, Mich. CA. **$75,205**. Group 52-12, c. conc. Tireman, Lenore, Freeland, Caldwell, Archdale, Mendota and Brace Sts., DETROIT, MICH. City, Carl D. Warner, comr. Dpt. P. Wks., Guardian Bldg., Detroit, Mich. Bids June 10. CD 6/5.

Denton Constr. Co., 7-170 General Motors Bldg., Detroit, Mich. CA. **$89,701**. Group 52-14, c. conc. Asbury Park, Berden, Glastonbury, Grayton, Griggs, Neff, Penrod and Starelian Sts., DETROIT, MICH. City, Carl D. Warner, comr. Dpt. P. Wks., Guardian Bldg., Detroit, Mich. Bids July 8. CD 12/17/51.

BUILDINGS

LOW BIDS AND CONTRACTS

Simpson Constr. Co., 235 N. Ogden Ave., Chicago, Ill., LB. **$747,171**, Jenner SCHOOL, 1009 N. Cleveland St., CHICAGO, ILL. Bd. Educ., 228 N. LaSalle St., Chicago, Ill. Bids Aug. 8. CD 8/1.

▲ **Procon, Inc.** (sub Universal Oil Products Co.), 75 E. Jackson Ave., Chicago, Ill., CA. 16,000 bbl. per day platforming unit to produce high octane motor fuel, WOOD RIVER, ILL. Shell Oil Co., Wood River, Ill. CD 11/14/51.

A. W. Kutsche & Co., 2924 W. Grand Blvd., Detroit, Mich. CA. **$675,523**. 2 story, bsmnt., brick, steel, McKenny Elementary SCHOOL addn., 19760 Burt Rd., DETROIT, MICH. City, Bd. Educ., Broadway, Detroit, Mich. Bids July 29. CD 7/21.

Palmer-Smith Co., 415 Brainard St., Detroit, Mich. CA. Est. **$500,000**. 2 story, bsmnt., brick, steel West Road Elementary SCHOOL, Charlton and Edsel Dr., TRENTON, MICH. Bd. Educ., School Dist. 1, Trenton, Mich. Bids July 15. CD 6/26.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Mo., Normandy (St. Louis 21, P. O.)—B.A. 9/4—Normandy Sanitary Sewer Dist., St. Louis County, Raymond M. Dobson, pres. Bd. Trustees, 7500 Natural Bridge Rd., sanitary sewer extens., incl. 30,061 ft. 8- to 30-in. sewer, 139 manholes, 2 lift stations, 1,550 lin. ft. 6 in. c.i. pipe, force main. Plans deposit $25. Russell & Axon, 408 Olive St., St. Louis, Zone 2, engrs. CD 5/26.

BIDS ASKED—BUILDINGS

Tex., Palacios—SCHOOL—B.A. 9/5—Palacios Independent School Dist., Palacios, elementary school. $300,000. Avery, Pierce & Morris, 2419 Travis St., Houston, archts. CD 10/10/51.

Tex., Austin—HOSPITAL—B.A. 9/10—Seton Hospital, Corp., Seton Hospital, 600 W. 26 St., 5 story, 45x61 ft. hospital addn., 2 addnl. stories 44x96 ft., brick East Wing existing hospital, $750,000. Keuhne, Brooks & Barr, 202 Perry-Brooks Bldg., archts. CD 1/11.

Tex., Beaumont—SCHOOL—B.A. 9/17—Beaumont Independent School Dist., French High School, $650,000, Maurice E. Walmer, 211 Park St., engr. CD 3/5.

▲ **Tex., Corpus Christi**—REFINERY—Bids Asked—Magnolia Petroleum Co., 1009 Fannin St., Houston, high octane gasoline refinery product unit, $2,495,200; some imprvs. to products line terminal, $732,000; oil products storage, $732,000, near here. CD 5/14.

▲ **Tex., Odessa**—OFFICE—Bids Asked—Ben Nedow, c/o Radio Station KECK, Odessa, 10 story office, $1,000,000. Wyatt C. Hedrick, 1005 First National Bank Bldg., Fort Worth, archt. CD 7/11.

Tex., Pasadena—COMMERCIAL—Bids Asked—Jeff Fleming & Assoc., Pasadena, commercial bldg. $300,000. CD 6/25.

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Tex., Pasadena—COMMERCIAL—Bids Asked—Syndicate, c/o Jeff Fleming, Pasadena, commercial, $300,000. CD 6/25.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IOWA—State Hy. Comm., Ames,
Taylor & Isenower, Inc., Hudson, Ia., LB, **$67,981** bridges and culverts, FN-57, Cedar Co. Bids Aug. 12. CD 8/5.

IOWA—State Hy. Comm., Ames,
Jon P. Abramsen Constr. Co., 720 Savings & Loan Bldg., Des Moines, Ia., LB, **$62,855**, 0.24 mi. paving P-588, Decatur Co.;
R. B. Burch, Inc., 249 33 St. Dr. S. E., Cedar Rapids, Ia., LB, **$148,692**, grading 15.73 mi. FN-57, Cedar Co.;
Wilbur Nielsen Co., Blencoe, Ia., LB, **$73,435**, grading 8.655 mi. SN-1026 Page Co. Bids Aug. 12. CD 8/5.

† **Myron Groseclose**, Bethany, Okla. CA **$792,000.** road repairs, imprvs., Naval Ammunition Depot, NOY 72113, MC ALESTER, OKLA. Officer in Charge of Constr., Eighth Naval Dist., Bldg. 16, Naval Station, New Orleans, La. CD 7/9 under LB.

Thompson, Haight & Keister, 2006 N. Portland St., Oklahoma City, Okla. CA **$558,150.** 750 mi. rural pole telephone lines, Hereford, TEXAS. West Texas Rural Telephone Co-operative, Hereford, Tex. Hasie & Green, Box 1139, Lubbock, Tex., engrs.

▲ **Rex D. Kitchens Constr. Co.**, box 3006 S. Austin Station, Austin, Tex., CA. **$2,035,511**, water filter plant, AUSTIN, TEX. City, Austin, Tex. Bids Aug. 8. Awarded Aug. 15. CD 8/12, under LB.

Markham & Brown, 1961 N. Industrial St., Dallas, Tex. LB **$103,850.** earthwork for bridge on Forest Ave., DALLAS, TEX. Dallas Co. Rd. Dist. 1, Court House, Dallas, Tex. Bids Aug. 7. CD 7/30.

L. Crawford & Co., N. Industrial St., Dallas, Tex. CA **$69,995.** storm sewer to drain area east of Marsh Lane, DALLAS, TEX. City, City Hall, Main and Harwood Sts., Dallas, Tex. Bids June 24. CD 5/20.

Bell Aircraft Corp., Hurst, Tex. Owner Bullds. **$150,000.** helicopter airport, DALLAS, TEX. CD 7/7.

Tellepsen Constr. Co., 1710 Telephone Rd., Houston, Tex. LB **$177,307.** Unit 1, constr. 118x478 ft., steel, rein.-con. Wharf Shed 2, HOUSTON, TEX. Harris County Ship Channel Navigation Dist., c/o Wharf No. 13, Houston, Tex. Bids Aug. 8. CD 9/19/51.

A. D. Muckelroy, Nacogdoches, Tex. LB **$39,895.** water distr. lines, LINDEN, TEX. City, Linden, Tex. Bids Aug. 6. CD 7/30.

A. D. Muckelroy, Nacogdoches, Tex. LB **$63,000.** sanitary sewer collection lines; LB **$66,160**, sewage disposal unit, LINDEN, TEX. City, Linden, Tex. Bids Aug. 6. CD 7/30.

City, Lubbock, Tex. Owner Builds. **$90,000.** addnl. units of water sys. rehabilitation, LUBBOCK, TEX. CD 7/11/52.

City, Lubbock, Tex. Owner Builds. **$75,000.** electric underground cable lines, LUBBOCK, TEX. W. B. Holmes, city engr. CD 10/6/50.

City, Pharr, Tex. Owner Builds. **$35,000.** addnl. water lines, sys. imprvs., PHARR, TEX. City, Pharr, Tex. Sigler, Clark & Winston, Weslaco, Tex., engrs. CD 1/8/51.

City, Pharr, Tex. Owner Builds. **$75,000.** some street imprvs. and asph. paving, PHARR, TEX. M. B. Gore, Pharr, Tex., engr. CD 10/15/51.

City, Rockdale, Tex. Owner Builds. **$35,000.** water lines, ROCKDALE, TEX. Julian Montgomery, 602 West Ave., Austin, Tex., archt.

City, Rockdale, Tex. Owner Builds. **$60,000.** sanitary sewer lines, ROCKDALE, TEX. Julian Montgomery, 602 West Ave., Austin, Tex., archt.

City, Taylor, Tex. Owner Builds. **$60,000.** Proj. 1 and 2, 10 and 12 in. sanitary sewer lines; **$116,000**, Proj. 5 storm sewers, TAYLOR, TEX.

Horace G. Bobo Constr. Co., Harlingen, Tex. LB **$55,056,** est. $40,000. 6-to-16-in. c.i. water lines, VICTORIA, TEX. City, Victoria, Tex. Bids Aug. 11. CD 8/6.

† **Campbell & Kay**, Box 4091, Station A, Albuquerque, N. M. LB **$203,335**, Lot No. 2; LB **$248,000**, Lot No. 1; LB **$176,481**, Lot No. 3, range instrumentation structure, Holloman Air Force Base, Eng. 29-005-52-76, ALAMOGORDO, N. M. U. S. Eng., P. O. Box 1538, Albuquerque, N. M. Bids Aug. 8. CD 7/9.

† **H. Collier & Mason**, Santa Fe, N. M. CA **$67,170.** exten. underground duct sys., Sandia Base, Eng. 29-005-52-91, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids June 24. CD 6/13.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **J. F. Pritchard & Co.**, 908 Grand Ave., Kansas City, Mo., CA. Approx. **$3,000,000**, 107x44 ft., 85 ft. high extension to Hawkeye Steam POWER PLANT, installing 11,500 kw turbo-generator and 125,000 lb/hr boiler and auxiliaries, 34.5 KV and 69 KV sub-stations, transformers, etc., STORM LAKE, IA. Awarded Feb. 20. CD 8/1, under Unclassified.

Wm. S. Rawlings, 1004 Forest St., Kansas City, Mo. CA **$125,000.** Cold Storage PLANT addn., KANSAS CITY, KAN. Mid-West Cold Storage & Ice Corp., Fifth and Kaw Sts., Kansas City, Kan. Raymond Reese, 3821 Sulphur Springs Rd., Toledo, O., archt. CD 11/21/51.

Steel Tank Constr. Co., 6100 Kansas St., Houston, Tex. CA **$575,000.** crude and products tank farm consists 18 steel tanks;
Owner Builds. $90,000. some pipe line laying in vicinity of refinery, 6 mi. northwest of CORPUS CHRISTI, TEX. Suntide Refining Co., c/o Sunray Oil

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LITTLE FERRY, NEW JERSEY

Corp., First National Bldg., Tulsa, Okla. CD 7/9.

Gulf Chevrolet Co., 414 N. Walter St., Corpus Christi, Tex. Purchases, Day Labor, Sub-contracts. $218,000. Truck Repair SHOP, CORPUS CHRISTI, TEX. CD 3/10.

W. K. Holt Machinery Co., W. Harding Blvd., San Antonio, Tex. Owner Builds. $95,000. SHOP and SHOWROOM, CORPUS CHRISTI, TEX. R. Newell Waters, Weslaco, Tex., archt.

General American Tank Terminal Co., Robstown Rd., Corpus Christi, Tex. Purchase and Hire. $185,000. constr. unit of tank storage farm, CORPUS CHRISTI, TEX.

Roden Constr. Co., Box 9816, Fort Worth, Tex. LB $309,600. 2 story, CHURCH, FORT WORTH, TEX. All Saints Episcopal Church, c/o Ray F. Holmes, N. P. Anderson Bldg., Fort Worth, Tex. J. H. Gaylord & Co., 722 N.P. Anderson Bldg., Fort Worth, Tex., archts. Bids Aug. 7. CD 1/8.

David Hannah & Assoc., 800 Main St., Houston, Tex. Owner Builds. $435,000. 52 DWELLINGS, HOUSTON, TEX. CD 4/10.

Paul Canto, 312 Hyde Park, Houston, Tex. Purchase & Hire, Sub-contracts. $310,000. 22 DWELLINGS, HOUSTON, TEX.

Bruce & Stewart, 2303 Second Pl., Lubbock, Tex. CA $309,115. HOUSING, LUBBOCK, TEX. W. R. Gaddis, Lubbock, Tex. CD 8/8.

Hospital Com., c/o Howard C. McKenna & Assoc., New Braunfels, Tex. cancelled bids to have been opened Sept. 1, 40-bed hospital, etc. NEW BRAUNFELS, TEX. Est. $500,000. CD 7/22.

▲† **Industrial Constructors**, 3860 Galapago St., Denver, Colo., LB, $2,129,000, Schedule 9A, GSA WAREHOUSE and reservoir, at Pueblo Ordnance Depot, Inv. 25-066-53-6, PUEBLO, COLO. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 8.

† **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex. CA $757,380. exten. LABORATORY Eng. 29-005-53-4, LAS CRUCES, N. M. U. S. Eng., 1538 Albuquerque, N. M. CD 8/13, under LB.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

Wash., Edmonds—FERRY TERMINAL—B.A. 9/10—Port of Edmonds, City Hall, ferry terminal, $300,000. Plans deposit $25. C. C. Arnold, 703 Arctic Bldg., Seattle, Zone 4, engr.

▲ **CALIFORNIA**—B.A. 9/11—State Div. Hys., 120 S. Spring St., Los Angeles,

Los Angeles Co.—1.1 mi. grading, paving retaining walks, undercrossing on Harbor Freeway between Olympic Blvd. and Second St. $3,300,000.

† **Oregon**—TELEPHONE CABLE—B.A. 9/25—U. S. Eng., Pittock Block, Portland, 5,000 ft. telephone cable for Lookout Point Dam, Civeng 35-026-53-29.

BIDS ASKED—BUILDINGS

▲ **Calif., Fresno**—SCHOOL—B.A. 9/11—Fresno City Unified School Distr., Fresno, Sequoia Junior High School, Hamilton Ave., $1,220,000. Plans deposit $100. Swartz & Hyberg, Rowell Bldg., archts. Extended date. CD 7/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **U. S. Eng.**, 751 S. Figueroa St., Los Angeles, Calif., rejected bids Aug. 7, parking apron overlay, Williams Air Force Base, Eng 04-353-53-3, CHANDLER, ARIZ. LB. $220,800. CD 7/24.

† **M. M. Sundt Constr. Co.**, 440 S. Park Ave., Tucson, Ariz., CA, $222,750, motor pool at Davis-Montham Air Force Base, ENG 04-353-53-1, TUCSON, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 7, awarded Aug. 8. CD 7/16.

▲ **Elliott Co.**, Ridgeway, Pa., CA, $1,874,644. generators for Box Canyon Dam, Newport, WASHINGTON. Pend Oreille Public Utility Dist., Newport, Wash. CD 5/15, under LB.

WASHINGTON—State Hy. Dpt., Olympia,

Woodworth & Co., 1200 E. D. St., Tacoma, Wash., CA $121,719, b. conc. paving 1.535 mi. Hy. 5-A, Kent east King Co.;

Standard Asph. Paving Co., Chronicle Bldg., Spokane, Wash., CA, $103,367, est. $100,000, bit. penetration macad. 6.114 mi. Hy. 3, Wallula vicinity, Franklin and Walla Walla Counties;

F. G. Bouine, 5311 E. Boone Ave., Spokane, Wash., CA, $61,218, stockpiling crushed stone surf., crushed stone and mineral aggregates on Hys. 2-A and 10-B Pine Canyon to Coulee City et al, Douglas and Grant Counties;

Goodfellow Bros., Wenatchee, Wash., CA, $316,441, bit. 5.3 mi. Hy. 11, Lind to Paha, Adams Co. Bids Aug. 12. Grand total, $602,745. CD 7/30.

G. E. Teufel Co., Henry Bldg., Seattle, 1, Wash., LB $503,000, est. $600,000. 120x160 ft. steel, rein.-conc. hangar with 30 ft. second story for offices, SEATTLE, WASH. Pan-American World Airways, Boeing Field, Seattle, Wash. Bids Aug. 2. CD 7/23.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento,

Granite Constr. Co., Box 900, Watsonville, Calif., LB, $2,529,641, road constr. 8.3 mi., grade separation structures between Rt. 68 at Gish Rd. and Warm Springs, Santa Clara and Alameda Counties;

Lefever & King, P. O. Box 535, West Sacramento, Calif., LB, $61,970, surf. 5.6 mi. between Windslow Bridge at Stony Creek and Fruto, Glenn Co. Bids Aug. 13. CD 7/22.

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▲ **Walsh Constr. Co.,** 785 Market St., San Francisco, Calif., CA, four-mile tunnel on Pit River, Shasta Co., CALIFORNIA. Pacific Gas & Electric Co., 245 Market St., San Francisco, Calif. Bids July 15. CD 6/27.

† **Peter Kiewit Sons' Co.,** 345 Kieways, Arcadia, Calif., LB, $889,000, strengthen taxiways and parking area. Naval Air Station, NOY 29222, Spec. 30872, MOJAVE, CALIF. Dpt. Navy, San Diego, Calif. Bids Aug. 7. CD 7/15.

▲ **Guy F. Atkinson Co.,** 10 W. Orange Ave., South San Francisco, CA, $1,214,338, repairs alterations to San Pablo Water Supply Tunnel, LS-579, OAKLAND, CALIF. East Bay Municipal Utility Dist., 512 16 St., Oakland, Calif. Bids July 25, awarded Aug. 11 CD 8/5, under LB.

▲ **M & K Corp.,** 200 Financial Center Bldg., San francisco, **Fredrickson & Watson Constr. Co.,** 873 81 Ave., Oakland, and **Piombo Constr. Co.** 1571 Turk St., San Francisco, Calif., LB, $1,257,000. South East Collections Sewers, Sections E-2, F-1, F-2, F-3, Hunter Point Sewer Tunnel, SAN FRANCISCO, CALIF. Dpt. P. Wks., City Hall, San Francisco, Calif. Bids Aug. 13. CD 7/22.

R. A. Wattson Co., 5528 Vineland Ave., North Hollywood, Calif., CA, $636,570, Ocean Outfall Sewer, Land Section, SANTA ANA, CALIF. Sanitation Dist. of Orange Co., 1104 W. 8th St., Santa Ana, Calif. Bids July 23. CD 7/31, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bauer Constr. Co.,** 407 U. S. National Bank Bldg., Portland, Ore., CA, $5,000,000, construct, manage and finance, 500 HOUSING units, RICHLAND, WASH., for Atomic Energy Comn., Richland, Wash. Sponsor will do work by day labor. CD 11/21/51, under Public Buildings.

▲ **State Bd. Higher Educ.,** Eugene, Ore., rejected bids Aug. 13, TEACHING HOSPITAL, University of Oregon Medical School, PORTLAND, ORE. LB $4,287,669. CD 6/27.

R & W Constr. Co., 5524 N. Rosemead Blvd., Temple City Calif., Owner Builds, $649,200, 75 frame, stucco DWELLINGS, Baskerville Ave., Linning Dr., Walnut Way, WHITTIER, CALIF.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

B. C., **Kincolith**—WHARF—B.A. 9/3—Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., wharf reconstruction. $75,000. Plans deposit $20. R. Blais, c/o owner, engr.

▲ **ONTARIO**—B.A. 9/5—Ontario Dpt. Hys., Parliament Bldg., Toronto,

Arnprior—bridge across Mississippi River near here, on Hy. 17, Approx. $500,000;

Toronto—bridge across Humber River Toronto Bypass Highway. J. D. Millar, deputy minister.

▲ **ONTARIO**—B.A. 9/5—Ontario Dpt. Hys., Parliament Bldgs., Toronto,

Chatham—hot mix paving 10 mi. near here, from Wheatly East on Hy. 3, Approx. $400,000

Kingston—grading, structures 6 mi. Dual Highway bypass, Approx, $1,000,000

London—38 mi. bypass dual highway bypassing London, Woodstock and other towns, Approx. $10,000,000.

Orillia—grading, structures, Orillia bypass road, 7.3 mi. and section Orillia to Crown Hill 12.1 miles, Approx. $1,000,000.

Pembroke—hot mix paving 10 mi. from Pembroke west on Highway 17, Approx, $400,000.

Port Hope—new road 16 mi, grading, structures from Highway 35 to Highway 28 north of here, Approx, $1,000,000.

Russeldale—hot mix paving 16 mi. Hy. 23 from Russeldale to Elginfield, Approx, $500,000.

Sudbury—grading, structures 9 mi. north of French River near Sudbury on Trans-Canada Highway, Approx. $500,000.

hot mix paving section Trans-Canada Highway 12.4 mi. from Massey east and 3.1 mi. from Sudbury to Copper Cliff on Ont. Hy. 17, Approx. $500,000.

Toronto—Toronto Bypass highway 20 mi. and 4 mi. entrance Toronto-Barrie Hy. from Wilson Ave. to Weston Rd. all dual express with cloverleafs, $13,000,000.

Washago—grading, 2 railway overpasses 1 bridge 4 mi. over canal on No. 11 highway with bypass $1,000,000 J. D. Millar, c/o owner, deputy minister. CD 4/27/44.

BIDS ASKED—BUILDINGS

▲ **Ont., London**—HOME FOR AGED—B.A. 9/3—City City Council, Mayor, Allan J. Rush, City Hall, part 1 and part 2 story, irregular shape brick home for aged, offices, dining rooms, boiler house, laundry, administration quarters, Approx. $1,600,000. T. C. McBride, City Hall, city archt. CD 8/18.

Que., Lacolle—FEDERAL PUBLIC BLDG.—B.A. 9/10—Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., federal public bldg. $300,000. E. A. Gardner, c/o owner, engr.

SOON LETS CONTRACT—BUILDINGS

Ont., Toronto—FACTORY—Remington-Rand Ltd., 210 King St. W., soon lets contract 3 story, bsmnt., 70x120 ft., steel, brick, factory, Breadalbane St. $300,000. Charles B. Dolphin, 880 Bay St., archt.

BUILDINGS

LOW BIDS AND CONTRACTS

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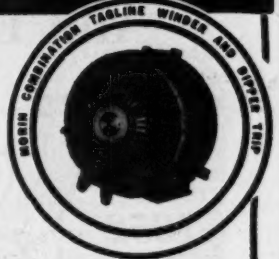

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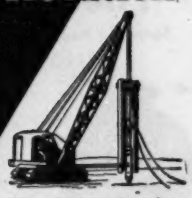

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Proposed Projects———

WATER SUPPLY

Mass., Upton—Town, Bd. Selectmen, Town Hall, water supply sys. $250,000. CD 10/5/45.

Tex., Belton—City, elevated and ground water storage, $75,000; water distr. and main lines, $60,000.

SEWERS, WASTE DISPOSAL

▲ **D. C., Wash.**—District of Columbia, Sewer Division District Bldg., Wash., D. C., 3,000 ft. tunnel, Piney Branch Road N. W., $500,000; 5,000 ft. sewer, Rock Creek Park, $500,000; CD 7/14/44.

Ind., Brownsburg—Town Board, Brownsburg, sewage treatment plant and sewerage sys., $200,000. Jno. W. Moore & Son, 830 Ind. Pythian Bldg., Indianapolis, Zone 4, consult. engrs.

Miss., Lucedale—City, voted $210,000 bonds, sanitary sewerage sys. CD 7/24.

▲ **Mo., Kansas City**—City, c/o Reed McKinley, dir. Dpt. P. Wks., City Hall, voted bonds, Aug. 6, sanitary sewers in unimproved areas, $9,000,000; main trunk sewer lines North Kansas City, $3,400,000. J. E. Maring, city engr. CD 6/30.

Okla., Stroud—City, defeated bonds, sewage disposal plant, $140,000. Benham Eng. Co., American National Bldg., Oklahoma City, Okla., consult. engr. CD 7/18.

Tex., Angleton—King & Sheets, City National Bank Bldg., Houston, sanitary sewers, $65,000; storm sewers, $60,000, areas of K & S Plaza addn., N. Valera Rd. east Loraine, E. Kyle and Rock Island Sts.

Tex., Fort Worth—City, c/o W. O. Jones, mgr., sanitary sewer mains in Rockwood Park, $105,000. Joe J. Rady, 511 Insurance Bldg., consult. engr. CD 2/24/49.

Tex., Houston—Benjamin Feld & Assoc., 3446 Southmore St., sanitary sewers, $62,500; storm sewers, $65,000.

Tex., Houston—City, City Hall, 600 Brazos St., $700,000 bond election Aug. 23, storm sewers. CD 8/7.

Tex., Houston—Magnolia Park Land Co., c/o David Stirton, M & M Bldg., sanitary sewers, $62,500; storm sewers, $63,000.

Tex., Houston—C. A. Vaughn & R. H. Lohse, c/o Southeast Lumber Co., Harrisburg, sanitary sewers, $68,500; storm sewers, $60,000, vicinity of P. C. Stewart, 700 acre tract, Deer Park. V. B. Bernard, Deer Park, engr.

Tex., Rockdale—H. H. Coffield & Assoc., Rockdale, storm sewers, open drainage, site earthwork, grading, leveling, $65,000; sanitary sewers, $65,000, Coffield Addn.

Wis., Cambridge—Village, sewage treatment plant, $125,000. Word & Strand, 1 W. Main St., Madison, consult. engrs.

BRIDGES

Kan., Westmoreland—Wabaunsee Co., Alma and Pottawatomie Co., Westmoreland, voted $500,000 bonds Aug. 5, bridge over Kaw River. CD 6/30.

NORTH CAROLINA—State Hy. and P. Wks., Comn., Raleigh.

Carteret Co.—supplement to complete bridge over Core Sound, $600,000, Wm. H. Rogers Jr., state hy. engr.

▲ **Ohio**—State Hy. Dpt., Columbus,

Cuyahoga Co.—Winner Belt Bridge carrying 8-lane divided highway from W. 14 St. and Abbey Ave. to E. 22 St. and Cedar Ave. incl. approaches, Part of Freeway System. $32,000,000. CD 4/4/50.

▲ **Tex., Galveston**—City, N. Y. Cartwright, mayor, rail lift bridge between Galveston Island proper and Pelican switch, $11,000,000.

STREETS AND ROADS

▲ **Calif., San Rafael**—City, City Hall, $1,400,000 bond election Oct. 7, streets.

Ind., Indianapolis—Bd. P. Wks., City Hall, c. conc. resurf. 1 mi. Indiana Ave., Michigan St. to Fall Creek, $102,510. W. R. Hunt, City Hall, city engr. CD 7/22/43.

Ia., Council Bluffs—City, paving 42 blocks of streets, $150,000. Forrest Griver, city engr. CD 5/1.

▲ **Mo., Kansas City**—City, c/o Reed McKinley, dir. Dpt. P. Wks., City Hall, voted bonds Aug. 6, street imprvs. $3,000,000, J. E. Maring, city engr. CD 4/10.

Mont., Billings—Billings Special Imprvt. Dist. 577, City Hall, widen First Ave. North from 21 to Division Sts.; Division St. from First Ave. North to Montana Ave. about 16 blocks; by narrowing existing sidewalks 2½ ft. on each side; rebuilding curbs and gutters; relocated street lights; constr. drive approaches. $100,000, John McGhee, city engr.

(Continued on page 90)

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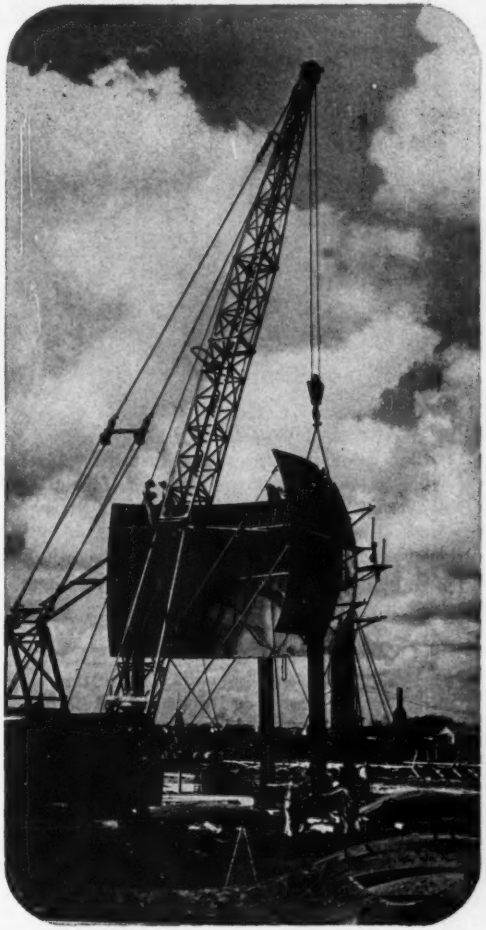

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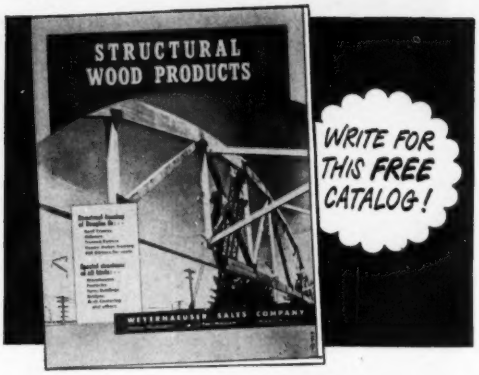

● This book illustrates and describes structural wood products that are precision-fabricated by Weyerhaeuser. It features a variety of types of roof trusses: bowstring, flat top, tandem, and pitched, for post-free, clear-span buildings, 30 feet and wider . . . round top and pitched type trussed rafters . . . segmental arched rafters for 30 to 50 foot spans . . . buttressed arches for 50 to 100 foot spans . . . girders and other wood structural systems.

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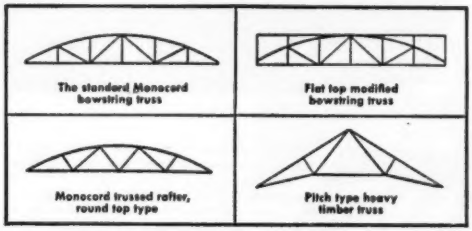
The standard Monocord bowstring truss
Flat top modified bowstring truss
Monocord trussed rafter, round top type
Pitch type heavy timber truss

WEYERHAEUSER
SALES COMPANY
FABRICATING DEPARTMENT
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TACOMA, WASH. NEWARK, N. J.

(Continued from page 88)

Tex., Dallas—Comrs., Dallas Co. Court House, rebuilding Belt Line Rd. Wilmer to Lancaster Sts. $165,000, Koch & Fowler, 3900 Lemmon St., consult. engrs. CD 2/27/50.

WASHINGTON—State Hy. Dpt., Olympia,
Kittitas Co.—grading 4.5 mi. Blewett Pass Hy., near Swauk, $430,000.

EARTHWORK, WATERWAYS

▲† **California**—Bureau Reclamation, Delta Sect. Stockton, plans Sly Park Unit east of Placerville, Central Valley Project to supply water to El Dorado County.

Camp Creek Diversion Tunnel—2,800 ft. long 7 ft. wide, horsehoe shaped concrete lined tunnel to divert water from Camp Creek into upper end of Sly Park Reservoir;

Sly Park Dam—178 ft. high, 850 ft. crest, earthfilled dam on Sly Park Creek, west end of Sly Park Valley 12 mi. from Placerville.

Sly Park Saddle Dam—103 ft. high, 650 ft. long earthfilled dam with concrete spillway to close saddle north of main dam.

Sly Park-Camino Conduit—7.4 mi. concrete or steel closed pipe line to carry water from reservoir to Camino, Total cost. $7,000,000. $1,250,000 allocated. CD 4/14/44.

O., Toledo—Comrs. Lucas Co., Court House, stone seawall, 20 ft. at base, 12 ft. at top, extending 9 ft. above water average, from Norden to Wynn Rds., about 2 miles to protect the Bay Shore. $320,000. Guy E. Neeper, co. engr. CD 1/11/51.

▲ † **South Dakota**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Pactola Dam incl. earthfil dam and 2 dikes, spillway with overflow crest structure, outlet-works conduit and tunnel, intake structure, gate chamber and shaft, shaft house and stilling basin, on Rapid Creek in Pennington Co., 13 air line mi. west of Rapid City. $10,644,000. L. N. McClellan, ch. engr.

▲ **Tex., Galveston**—City, N. Y. Cartwright, Jr., mayor, series of dikes at Pelican Switch Inlet to prevent tide erosion, $5,000,000.

▲† **Washington**—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., irrigating 65,000 acres in Okanogan, Douglas and Chelan Counties, with water stored behind Chief Joseph Dam Bridgeport, $34,000,000.

AIRPORTS

▲ **Mo., Kansas City**—AIRPORT—City, City Hall, voted bonds Aug. 6, purchase land and constr. runways at new super-industrial airport, $3,000,000; constr. Industrial facilities on super airport, $20,000,000, J. E. Maring, city engr. CD 6/30.

O., Akron—AIRPORT—City, wid'n. North-South taxiway to 150 ft. and double the length to 5,000 ft. Akron Municipal Airport. $125,000.

Tex., Lubbock—HANGAR STALLS—City, 12 T-hangar stalls at municipal airport, $100,000. CD 5/15.

LATIN AMERICA

Mexico, Coyote—Nacional Financiera, S.A., V. Carranza, 25, Mexico City, plans cement factory, $400,000.

Mexico, Vega—S ria. de Recursos Hidraulicos, P. de la Reforma, 69, Mexico City, plans irrigation dam, $300,000.

PUBLIC BUILDINGS

Ala., Attalla—HOUSING—Attalla Housing Auth., Attalla, plans by W. Douglas, 2922 7 Ave. S., Birmingham, 62 housing units, $525,000.

▲ **Ala., Florence**—PLANT—City, City Hall, ceramic tile plant for Stylon Corp., Boston, Mass., $1,300,000.

Calif., Azusa—GYMNASIUM—Citrus Union High School, 18824 E. Foothill Blvd., Azusa, plans by Austin, Field & Fry, 2311 W. 3 St., Los Angeles, 1 and part 2 story, precast concrete gymnasium, $450,000.

Calif., Felton—SCHOOL—San Lorenzo Valley Unified School District, Felton, plans by Johnn Lyon Reid, 109 Stevenson St., San Francisco, high school, $300,000.

Calif., Fresno—INDUSTRIAL ARTS—State Div., Architecture, P. Wks. Bldg., Sacramento, industrial arts bldg. at Fresno State College, $553,000.

Calif., Hayward—SCHOOL—Hayward Elementary School District, 1099 E. St., Hayward, $950,000 bond election Oct. 2, school.

Calif., Martinez—ADMINISTRATION—Contra Costa Co., Hall of Records, plans by Confer & Willis, 366 40 St., Oakland, county administration bldg. $450,000. CD 6/21/48.

▲ **Calif., Martinez**—COLLEGE—Contra Costa Junior College, Martinez, plans by John Carl Warnecke, 507 Howard St., San Francisco, 5 shop bldgs. at $1,000,000; plans by Jack Buchter, 61 Moraga Highway, Orinda, college science bldg. at Junior College, $500,000.

Calif., Pittsburg — SCHOOL, etc. — Pittsburg Unified School Dist., Charles E. Hawroth, supt., Pittsburg, plans by A. A. Cantin & A. MacKenzie, Cantin, 705 Market St., San Francisco, high school; plans by Charles F. Dean, 1521 I St., Sacramento, boys gymnasium, $400,000. CD 7/27/50.

(Continued on page 92)

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IT'S the same story on job after job — Heiliners move more dirt, faster, at less cost.

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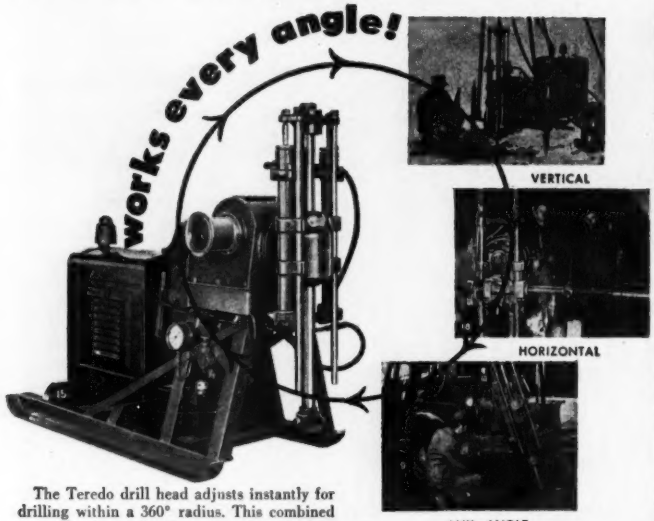

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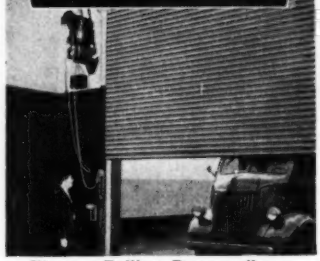

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(Continued from page 90)

Calif., San Francisco—SCHOOL—Dpt. P. Wks., City Hall, plans by Meyer & Evers, 406 Montgomery St., San Francisco, Burnett Elementary School, $375,000. CD 11/17/48.

▲ Calif., San Lorenzo—SCHOOL—San Lorenzo Elementary School Dist., Paul D. Ehret, supt., Second and Sycamore, St., P. O. Box 5, San Lorenzo, $1,300,000 bond election Oct. 2, school.

Calif., Visalia—SCHOOL—Visalia City Elementary School Dist., Hilton D. Bell, supt., 815 S. Conyer St., plans by Robert C. Kaestner, 210 N. Encina St., Mineral King Elementary School. $300,000. CD 10/7/48.

▲ Calif., Whittier—SCHOOL—Whittier Union High School Dist., 601 W. Philadelphia St., plans by Wm. H. Harrison, 816 W. 5 St., Los Angeles. High School No. 3, Haines and Mills Aves. $1,000,000. CD 11/9/51.

Del., Wilmington—SCHOOL—Wilmington Bd. Educ., 11 and Wollaston Sts., George Gray School addn. $653,000.

▲ Fla., Jacksonville—SCHOOL—Bd. P. Instruction, 605 Ocean St., high school for Negroes, at Paxton Field Area, $850,000; elementary school at Lake Shore Area for colored people, $525,000. CD 6/30/50.

▲ Fla., Tallahassee—OFFICE—State Imprvt. Comn., Tallahassee, plans by Guy F. Fulton & Assocs., state archts., Tallahassee, office bldg. $3,000,000.

▲ Ga., Decatur—SCHOOL IMPRVS.—De Kalb Co., Bd. Educ., Court House, bond election Sept. 16 school imprvs., $3,500,000.

Ill., Joppa—SCHOOL, etc.—Joppa High School Dist., Bd. Educ., Joppa, high school addns., imprvs. $400,000.

Ill., Millstadt—SCHOOL—Bd. Educ., Millstadt, voted $330,000 bonds, 1 story, 60x332 ft., L-shaped grade school. Wm. B. Ittner, Inc., 408 Bd. Educ. Bldg., 911 Locust St., St. Louis 1, Mo., archt.-engr.

▲ Ill., Vandalia—HOSPITAL—Fayette County Hospital Auth., Vandalia, plans by Pace Assocs., 53 W. Jackson Blvd., Chicago, Zone 4, 3 story, bsmnt. hospital. $1,500,000. CD 3/25.

Ill., Woodstock—SCHOOL, etc.—School Dist. 72, Woodstock plans by Bradley & Bradley, 226 S. Main St., Rockford, Junior High School and Grade School. $700,000.

Ind., Hammond—SCHOOL—School City of Hammond, 5935 Hohman Ave., plans by Turner & Turner, 5945 Hohman Ave., James Whitcomb Riley School. $500,000. CD 11/20/45.

Kan., Hays—SCHOOL—Bd. Educ., $450,000 bond election Sept. 30, high school addn. Mann & Co., Hutchinson. archt. CD 5/29.

Ky., Mount Sterling—HOSPITAL—Montgomery Co. Fiscal Court, county hospital, $500,000.

† Mass., Charlestown—POWER PLANT—P. Wks. Office, 495 Summer St., Boston, power plant changes to incl. 7,500 kw turbo generator, $149,500; imprvs., alterations feed water heater, $121,000, Boston Naval Shipyard, Charles T. Main, Inc., 80 Federal St., Boston, consult. engr.

Mass., Lowell—INSTITUTE—State, Dpt. Educ., 200 Newbury St., Boston, plans by John M. Gray Co., 175 High St., Boston, remodel bldg., Lowell Textile Institute E 506, $300,000. CD 7/30/51.

Mich., Ann Arbor—PARKING STRUCTURE—City, Wm E. Brown Jr., mayor, City Hall. 3 deck concrete, steel parking structure, near University of Michigan, $400,000. CD 11/21/14.

▲ Minn., Minneapolis—HOUSING—Minneapolis Housing & Redevelopment Auth., 1014 Metropolitan Life Bldg., A. C. Godward, exec. dir., plans by Armstrong & Schlichting, 5 E. 22 St., Minneapolis, 200 housing units, Site Q, Olson Hy. and Lyndale Ave. North. $3,000,000. CD 7/24.

Minn., St. Paul—JAIL—Bd. Comrs. Ramsey Co., E. A. Monick, aud., T. Schmidt, chn., plans by Walter Butler Co., 1300 Minnesota Bldg., county jail, Kellogg Blvd. between St. Peter and Wabasha Sts. $500,000. CD 6/18.

Miss., Biloxi—SCHOOL—City, plans by John T. Collins & Assoc., Box 112, and Landry & Matthes, Hattiesburg. Junior High School. $400,000. CD 5/10/50.

Mo., Independence—SCHOOL—Bd. Educ., L. G. Keith, supt., plans by Marshall & Brown, 1016 Baltimore St., Kansas City, Mo., secondary school, US 24 and Noland Rd. $444,000.

Mo., St. Joseph—SCHOOL—Bd. Educ. plans by Wm. B. Ittner, Inc., 911 Locust St., St. Louis, Zone 1, and Walter Boschen, assoc. archt., St. Joseph, 1 story, 46x280 ft., 82x160 ft., 75x197 ft., brick, concrete Hosea Elementary School, Gordon Ave. south of Valley St. CD 11/13/51.

▲ N. Y., Brooklyn—HOUSING—New York City Housing Auth., 63 Park Row, New York, Zone 38, plans by Pomerance & Breines, 33 W. 46 St., New York, four 13 story and six 7 story apartments, Howard Houses, East New York, Stone, Watkins and Rockaway Aves., $11,500,000.

O., Columbus—SCHOOL WINGS—Grandview Heights School Dist., 1587 W. 3 Ave., plans by Benham, Richards & Armstrong, 1124 Goodale St., two 2 story brick, steel, concrete Grandview High School wings, $450,000.

Pa., Bellwood—SCHOOL—Bellwood—Antis School Dist., Bellwood, plans by Buchart, Eng. Corp., York, 10-room brick, block grade school, $300,000.

S. C., Columbia—HOSPITAL—State Mental Health Comn., State Capitol, disturbed patients bldg. at state hospital, $300,000.

Tex., Cameron—HOUSING—Cameron Housing Auth., Cameron, 25 brick type duplexes for Whites, $325,000; 25 type duplexes for Negroes and Latin Americans, $300,000.

(Continued on page 94)

Campaign Headquarters U.S.A.

Junior is putting on his GI uniform for the veterans' parade to remind everyone to register so they can vote Nov. 4.
Sis is boning up to write her entry in the Citizenship Essay Contest the businessmen's association is sponsoring at school.
Dad's easy chair is empty—he's at the meeting of the citizens' get-out-the-vote committee.
Mother's helping her club make a telephone campaign telling everyone when and where to register.
Grandma's sending registration reminders to all the church members. Even little Sis is helping—rubber-stamping messages on the cards.

The Family Vote will elect the Next President

NOT THE FARM VOTE...
THE BIG-CITY VOTE...
THE LABOR VOTE...
OR ANY PARTY VOTE...

Politicians talk a lot about this and that "bloc" of voters being decisive factors in this election. So do all the pollsters. You can't blame them for trying to dope it out that way in advance . . . but . . .

YOU know you're going to vote your own sweet way when you get behind that voting booth curtain—that where you live or work hasn't got a blankety-bloc thing to do with how you'll vote. You'll vote for what you believe to be in the best interests of your family—your kids—and your kids' kids.

So YOU know that this year—as always—it will be the FAMILY vote that really decides things. And families are working as never before to make sure every American votes. Right now in millions of American families, everyone from Little Sis to Grandma is pitching in to remind every eligible American to register to make sure of the opportunity to vote. And then they'll tackle the job of getting out the vote of every member of America's 44,000,000 families. They're the biggest "bloc" in America—they ARE America!

If your family is already working at the job—congratulations! If you aren't, talk it over at supper tonight, and pitch in tomorrow.

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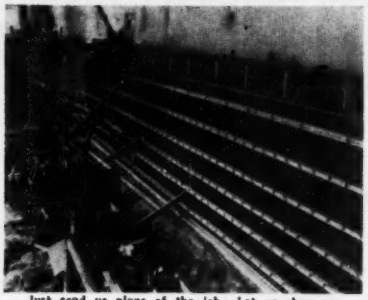

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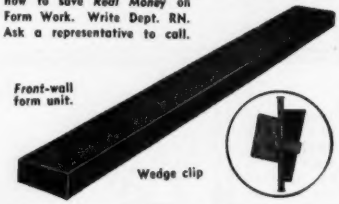

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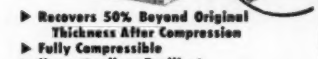

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(Continued from page 92)

▲ **Tex., Harlingen**—SCHOOL—Harlingen Independent School Dist., plans by Cocke, Bowman & York, 1220 W. Harrison St., elementary classrooms, $400,000; remodeling, repairing group of schools, $350,000; elementary school, $300,000. CD 5/28.

Tex., Houston—SCHOOL—Houston Independent School Dist., 1600 Washington St., plans by Wyatt C. Hedrick, engr. and archt., 5201 Fannin St., East Side Elementary School, $310,000; Jeff Davis School, $325,000; Hillard Negro School addn., $300,000. CD 6/23/47.

▲ **Va., Alexandria**—SCHOOLS—City, 208 N. Columbus St., plans by Joseph H. Saunders Jr., 121 S. Columbus St., 1 story, masonry Shirley-Duke Elementary School, Briland St., $950,000; 1 story, masonry elementary school, Bradock Rd., $750,000. CD 5/22.

Va., Arlington—SCHOOLS—Bd. Educ., Arlington Co., 1426 N. Quincy St., plans by McLeod & Ferrara, 1741 DeSales St. N. W., Wash., D. C., Tuckahoe Elementary School near 26 and Underwood Sts., $600,000; Barcroft School addn., 625 S. Wakefield St., $300,000.

Va., Arlington—SCHOOL—Arlington Co. School Bd., 1426 N. Quincy St., plans by Allen J. Dickey, 1137 N. Highland St., brick, concrete, masonry Taylor Elementary School, $750,000.

Va., Fairfax—SCHOOL—Fairfax Co. School Bd., Fairfax, plans by Ballou & Justice, 106 E. Cary St., Richmond, brick, concrete, masonry Herndon High School, $400,000. CD 6/6/50.

▲ † **Va., Fort Eustis**—FACILITIES—U. S. Eng., foot of Front St., Norfolk, admin. and operation facilities, liquid fuel storage, airfield pavement and utilities for Transportation Corps, $3,233,000.

▲ **Wash., Seattle**—SCHOOLS—Shoreline School District, N. 137 St. and Roosevelt Way, 1 intermediate school at 25 Ave. N. E. and E. 160 St., $750,000; another at Fremont Ave. and N. 170 St., $750,000. CD 9/11/45.

▲ **Wash., Spokane**—AUDITORIUM—City, City Hall, bond election Nov. 4, civic auditorium, $1,500,000. CD 9/28/48.

Wyo., Green River—COURT HOUSE—Sweetwater Co., Green River, plans by Armand Kellogg, Rock Springs, court house. $324,000.

Ont., Forest—SCHOOL—Forest District High School Bd., W. E. Freele, secy., Forest high school addn. $300,000.

▲ **Ont., Ottawa**—LIBRARY—Dpt. P. Wks., Hunter Bldg., plans by E. A. Gardner, c/o owner, reconstr., alteration of Federal Library of Parliament. $2,000,000. CD 5/29/46.

▲ **Ont., Woodstock**—HOSPITAL—Woodstock General Hospital, Woodstock, 93-bed hospital unit addn. $1,450,000. CD 5/1/47.

COMMERCIAL BUILDINGS

Calif., Menlo Park—OFFICE—Pacific Telephone & Telegraph Co., 740 New Montgomery St., San Francisco office, Middlefield Rd., $800,000.

Calif., Palm Springs—STORES—Western Hotels, Inc., New Washington Hotel, Seattle, Wash., plans by Williams, Williams & Williams, The Plaza, Palm Springs, and Clark & Frey, Palm Springs, stores and offices addn., Hotel Oasis, $350,000.

Calif., Richmond—OFFICE—Ford Motor Co., 1414 S. 10 St., Oakland, regional sales office $800,000.

Ill., Oak Park—SCHOOL—Ascension Parish, 815 S. East Ave., plans by McCarthy & Smith, 69 W. Delaware St., Chicago, Zone 10, school, $400,000.

Ind., Anderson—BANK—Anderson Federal Savings & Loan Assn., L. K. Bong, mgr., 1000 Meridian St., plans by Chicago Bank Equipment Co., 4353 Lee St., Chicago, Ill., 2 story, 100x100 ft., modern banking structure, with drive-in facilities. $400,000.

Ind., Hobart—CHURCH—St. Bridget Catholic Church, Hobart, plans by Geo. W. Smith, 2105 E. 71 St., Chicago, Ill., church. $300,000.

Ky., St. Matthews (Br. Louisville)—CHURCH, etc.—Diocese of Louisville, c/o Walter Wagner & Joseph Potts, archts., Fincastle Bldg., Louisville, church, T-shaped School and Convent, $300,000. E. R. Ronald & Assoc., 554 S. Third St., Louisville, consult. engrs.

▲ **Mass., Bedford**—RESIDENCES—Robert Rolde, 10 Tremont St., Boston, 100 residences, $1,000,000.

Mass., Lexington—RESIDENCES—Robert Rolde, 10 Tremont St., Boston, 55 residences, $550,000.

Mass., Needham—RESIDENCES—Philip & Orazio Nardone, 74 Nehoiden St., 35 residences, Nehoiden St. $420,000.

▲ **Mass., Waltham**—RESIDENCES—Gerald Callahan, 1105 N. Main St., Randolph, 100 residences, $1,000,000.

▲ **Mass., Woburn**—RESIDENCES—Charles McLaughlin, Coolidge Ave., Somerville, 145 residences, $1,450,000.

Mo., St. Louis County—SCHOOL—St. Joseph's Academy, Sister Virginia Marie, C.S.J., principal, Wydown and Big Bend, Clayton, Zone 5, plans by Carroll & Dean, 5473 Delmar Blvd., St. Louis, Zone 12, rein.-con., brick high school for girls, Lindbergh Blvd. and Litzsinger Rd.

▲ **N. Y., New York**—COLLEGE OF MEDICINE, etc.—Yeshiva University, 270 Park Ave., New York, plans by Kelly & Gruzen, 80 Park Ave., New York, Zone 3, College of Medicine Bldg., Eastchester Rd. and Seminole Ave. $10,000,000. Total cost $25,000,000 CD 6/27/51.

▲ **O., Barberton**—SHOPPING CENTER—Magic City Shopping Center, Inc., c/o Newton Heller, Pettitt's Hardware Store, 28 N. Main St., Akron, shopping

(Continued on page 96)

Start it...then walk away

IT'S THE GARDNER-DENVER 600

You don't need to "nursemaid" a Gardner-Denver 600 Portable. Just start it . . . then walk away. No eagle-eyed watching of complicated gadgets. No tricky controls to get out of order.

ANY compressor man can operate a 600.

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COMPRESSORS, PUMPS AND ROCK DRILLS

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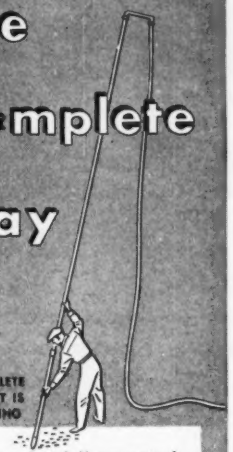

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COMPLETE MACHINERY & EQUIPMENT COMPANY, INC.
36-40 11th STREET
LONG ISLAND CITY, N. Y.

PLETE WELLPOINT SYSTEMS

FOR SALE OR RENT

(Continued from page 94)

center for 30 stores adjacent to Tuscarawas Ave. viaduct. $3,000,000.

Okla., Tulsa—EDUCATIONAL—Grace M. E. Church, 49 St. and Sand Springs Rd., plans by Buck & Caldwell, Bartlesville, educational bldg., 49 and Sand Springs Rd. $300,000.

▲ Pa., Allentown—SHOPPING CENTER—Morris A. Kravitz, 225 S. 15 St., Phila., shopping center, N. 7 St., Pike, $1,000,000.

Pa., Erie—SCIENCE—Gannon College, 166 W. 6 St., plans by Gifford & Sunda, 119 W. 8 St., Erie science bldg. $300,000.

Tex., Amarillo—DWELLINGS—Hamlet Homes, 319 Oak Dr., 38 dwellings, $315,000.

Tex., Angleton—DWELLINGS—King & Sheets, City National Bank Bldg., Houston, 40 dwellings, $335,000; 45 dwellings, $350,000.

Tex., Houston—DWELLINGS—Garden Oaks Plaza Corp., 43 Ave. and Shepherd Dr., 15 frame dwellings, air-conditioned, $360,000; ten 1 and 2 story, masonry dwellings, $310,000; 18 frame type dwellings, $325,000; 20 frame, masonry dwellings, $380,000, all foregoing off Azalea Dr.

Tex., Houston—DWELLINGS—L & L Constr. Co., c/o Frank LaCoke, 3400 Ross St., Dallas, 30 frame, brick dwellings, $320,000.

Tex., Houston—DWELLINGS—Three-W Homes, c/o E. J. Webster, 311 W 22 St., 20 dwellings, area of Sec. 13 of Oak Forest, $300,000.

▲ Tex., Houston — DWELLINGS — C. A. Vaughn & R. H. Lohse, c/o Southwest Lumber Co., Harrisburg, 50 dwellings, $475,000; 40 dwellings, $435,000; 45 dwellings, $450,000; 32 dwellings, $325,000; 35 dwellings, $315,000, vicinity P. C. Stewart tract, Deer Park. V. B. Bernard, Deer Park, consult. engr.

Tex., Houston—DWELLINGS—Yellowstone Corp., Lyndhurst St., frame, masonry dwellings, concrete slab fdn. $310,000.

Tex., Laredo—DWELLINGS—H. B. Zachry Co., Transit Tower Bldg., San Antonio, plans by Atlee B & Rob. M. Ayres, Transit Tower, San Antonio, 51 frame dwellings, $385,000.

Tex., Rockdale—DWELLINGS—Aluminum Co. of America, Rockdale, 40 frame type dwellings, $303,000; 40 frame dwellings, $325,000, Westwood addn., near here.

Tex., Rockdale—DWELLINGS—H. H. Coffield & Fritz Hunter, Rockdale, 40-frame type dwellings, $300,000; 60 frame dwellings, $445,000.

▲ Va., Norfolk—HOUSES—Mamie Properties, Inc., c/o Saul Salzberg & Co., 1125 Graydon Ave., 150 houses, $1,000,000.

Wash., Seattle—CLINIC—Mason Properties Corps., 901 Seneca St., plans by John Graham & Co., Dexter Horton Bldg., Zone 4, 5 story, bsmnt., rein.-con. clinic. $450,000.

Alaska, Juneau—HOUSES—Alaska Plywood Corp., Juneau, 50 houses, $650,000.

▲ B. C., Vancouver — MAIL ORDER BLDG. — Robert Simpson Co., Ltd., Queen and Yonge Sts., Toronto, Ont., 3 story mail order bldg., in Burnaby, Vancouver suburb. $6,000,000.

INDUSTRIAL BUILDINGS

Calif., San Jose—PLANT, etc.—Sylvania Electric Products, Inc., 111 Sutter St., San Francisco, industrial plant and laboratory on 13-acre site, near here. $450,000.

▲ Calif., Watson—REFINERY EXPANSION—The Richfield Oil Co., 555 S. Flower St., Los Angeles, refinery expansion, fluid catalytic cracking unit. $40,000,000.

▲ Del. Seaford—PLANT—E. I. du Pont de Nemours & Co., Inc., Nemours Bldg., Wilmington, nylon mfg. plant, CD 9/22/49.

Fla., Miami—PLANT—Frohman Mfg. Co., Inc., 3333 N. W. North River Dr., plant, manufacturing ordnance addn., improv. $259,254.

▲ Ill., Bedford Park—MANUFACTURING, etc.—Corn Products Refining Co., 17 Battery Pl., New York, N. Y., Zein Mfg. bldg., refrigeration bldg., packaging and warehouse bldg., $6,000,000, Vern E. Alden & Assocs., 120 S. La Salle St., Chicago 3, Ill., consult. engrs.; 100 ft. high, steel, concrete brick boiler plant at Corn Refining Plant, $2,500,000, Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill., consult. engrs.

Ind., Jeffersonville—TRUCKING TERMINAL—Huber & Huber, 970 S. 8 St., Louisville, Ky., trucking terminal, $500,000.

Kan., Clay Center—GARAGE AND SERVICE BLDG.—C & W Rural Electric Co-operative, Clay Center, plans by Cayton & Murray, Abilene, garage and service bldg. with offices, $130,000.

La., Shreveport—WAREHOUSE—Louisiana Paper Co., 225 Crockett St., warehouse, $250,000.

▲ Mich., St. Clair—PLANT—Michigan Iron & Coke Co., Frank J. McLaughlin, pres., St. Clair, plans by Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, coke oven plant, blast furnace, on 800 acre tract, St. Clair River, $15,000,000.

▲ O., Cincinnati—WAREHOUSE—Albers Super Markets, Inc., 226 W. Mitchell Ave., warehouse on west side of Reading Rd. south of corporation line of Sharonville, $1,500,000.

O., Sharonville—WAREHOUSE—Solar Steel Co., Union Commerce Bldg., Cleveland, 40,000 sq. ft., warehouse along New York Central R.R. on U. S. Hy. 25, $750,000.

Pa., Bethlehem—RECORDS—Bethlehem Steel Co., Bethlehem, plans by Francis Palms & Assoc., 925 20 St. N.W., Wash., D. C., 1 story, 90x130 ft., 40x80 ft., brick, steel, cinder block records bldg. CD 5/31/46.

Pa., Phila.—SERVICE STATIONS—Atlantic Refining Co., 260 S. Broad St., Phila., 2 gasoline service stations 8 and Spring Garden Sts., and Belfield and Ogontz Aves. $125,000. Lester M. Goldsmith, c/o owner, ch. engr. CD 1/10/49.

S. C., Simpsonville—PLANT—Trinacria Specialty Mfg. Co., Norwich, Conn., plant. $125,000.

Tex., Agua Dulce—PLANT—South-Tex. Corp., Agua Dulce, cycling plant expansion, incl. 3 boiler unit, near Corpus Christi. $750,000.

Tex., Houston—PARKING GARAGE—Rob. W. Clemens, 4110 Dennis St., plans by Rob. W. Clemens & Assoc., 4110 Dennis Sts., 27,000 sq. ft. rein.-con., masonry parking garage, $400,000. Rob. L. Reid, 1705 W. Gray St., consult. engr., P. O. Dpt., lessee.

▲ Tex., Houston—PLANT—Continental Oil Co. & Assoc., Sterling Bldg., petrochemical plant, $15,000,000, Serge B. Jurenev, c/o owner, engr.

Tex., Houston—PLANT—Loffland Brothers Co., City National Bank Bldg., addnl. rein. steel fabricating plant, $250,000; addnl. warehouse unit, $125,000.

Tex., Houston—STORAGE PLANT—Shell Oil Co., Shell Bldg., petroleum storage plant, Deer Park, $350,000. CD 10/11/51.

Tex., Houston—WAREHOUSE—J. Weingarten, Inc., 808 Prairie St., addnl. 150,000 sq. ft. masonry warehouse unit on 27 acre tract off Lockwood, $750,000.

▲ Tex., Mount Pleasant—PLANT—American Liberty Oil Co., Mount Pleasant, gas production concentration unit, modification existing poly plant, $1,500,000; feed preparation unit, $500,000; thermofore catalytic cracking unit, $750,000. Fluor Corp. Ltd., M & M Bldg., Houston, consult. engr. CD 5/14.

Va., Norfolk—BUS TERMINAL—Greyhound Bus Corp., 155 Summers St., Charleston, W. Va., plans by Vernon A. Moore, 716 W. 20 St., Norfolk, bus terminal. $100,000.

Wis., Clear Lake—GRAIN ELEVATOR, etc.—Farmers Co-operative Creamery Co., Clear Lake, 2 story, part bsmnt., 92x85 ft. concrete blocks grain elevator and storage bldg.

Wis., Ft. Atkinson—PLANT—Jones Dairy Farms, meat packing plant addn. $200,000. Henschein Everds & Crombie, 59 E. Van Buren St., Chicago, Zone 4, Ill., consult. engrs.

Ont., Niagara Falls—PLANT OFFICE—North American Cyanamid Ltd., 1 Fourth Ave., Niagara Falls, plans by Thomas R. Wiley, 32 Williams St., St. Catherine, 2 story, bsmt., 42x150 ft., steel masonry plant office $250,000. CD 7/16/51.

Ont., St. Catherines—FACTORY—Packard Electric Ltd., 13 Race St. 60x300 ft. factory addn. $250,000.

UNCLASSIFIED

Idaho, Kellogg—GRANDSTAND—City, City Hall, reconstr. grandstand at athletic field. $125,000.

Illinois—RAILROAD—Cleveland, Cincinnati, Chicago & St. Louis R. R., F. H. Simpson, ch. engr., La Salle St. Station, Chicago, Zone 5, 2.3 mi. branch line on Southern Illinois to point on Ohio River near Joppa, Ill. and barge line facilities on river to cross river into Chiles, Ky. $600,000.

Kentucky—GAS LINES—Morganfield Natural Gas Co., Morganfield, natural gas lines through Sturgis, Providence, Clay, Diamond, Wheatcroft & Sullivan, $1,000,000.

Mo., Clayton (St. Louis 5 P. O.)—TELEVISION STATION—Radio Station KFUO, Lutheran Church Missouri Synod, Concordia Seminary, 801 DeMun Ave., television station and equip. to operate on UHF Channel No. 30. $500,000.

Mo., St. Louis—TELEVISION STATION—Radio Station KREI, c/o Cecil W. Roberts, Farmington, television station to operate on Channel 36. $133,000.

N. C., Lexington—NATURAL GAS SYSTEM—City, natural gas distr. sys. $960,000.

Okla., Yukon — ELECTRIC DISTRIBUTION SYSTEM — City, defeated bonds, electric distr. sys. $105,000. C. H. Guernsey, 2701 N. Oklahoma St., Oklahoma City, consult. engr. CD 7/23.

O., Massillon—TELEVISION STATION—Midwest TV Co., c/o Edward Lamb, Enterprises, Security Bldg., Toledo, television station main studio and transmitter 6 mi. northwest of Massillon on Route 21 near Butler Bridge, $258,000.

Texas—RAILWAY YARD AND TRACKAGE—Texas & New Orleans Ry. Co. (Southern Pacific Lines in Texas and Louisiana) L. A. Loggins, ch. engr., 913 Franklin St., Houston, railway yard, trackage improvs., Rosenberg, Harrisburg and Houston, $375,000.

Tex., Harlingen—TV STATION—Roy Hofheinz, 4000 Main St., Houston, tv station. $175,000.

Tex., Houston—TELEVISION STATION—KNUZ Television Co., c/o Max H. Jacobs, City National Bank Bldg., television station, Blodgett and Austin Sts., $250,000.

Va., Richmond—TELEVISION TOWER—Richmond Broadcasting Co., Inc., 3301 W. Broad St., 795 ft. steel television tower. $100,000. CD 9/12/44.

(Proposal Advertisements see pp. 72 to 75)

When Time Counts - Count On —CONNORS— Reliable Service

Over the years CONNORS has built a well-earned reputation for dependability in the industry.

So if quality steel merchant bars are a component of your product, you can count on CONNORS for the reliable service your production schedules need and deserve.

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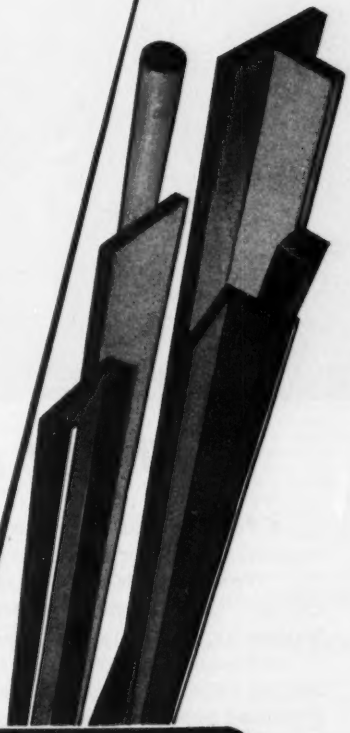

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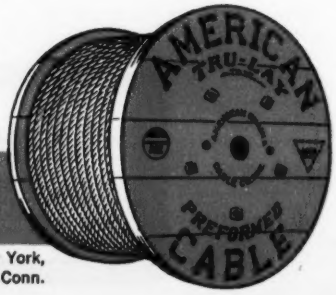
TRU-LAY Preformed WIRE ROPE

● For each use there is *one best* wire rope . . . one that will stand repeated loading, abrasion, crushing, or continuous bending, and be the best rope to buy.

To achieve this, there is a TRU-LAY Preformed Wire Rope made in a special construction for your equipment. This construction has the exactly right combination of strength, bending life, and resistance to wear and crushing that you need.

The one best wire rope . . . TRU-LAY Preformed . . . will last you longer and cost less to use. Specify and get TRU-LAY Preformed improved plow steel—the rope identified by the Green Strand.



ACCO

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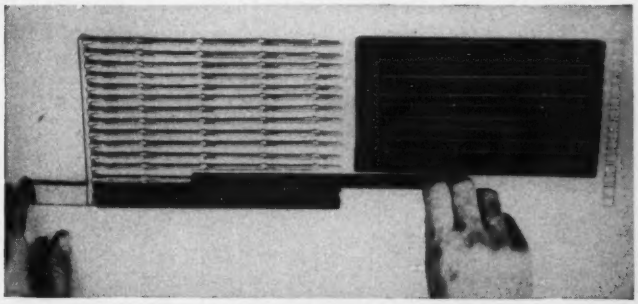
Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.



Exide develops battery improvements

Corrosion of the positive plate grid is one of the major causes, if not the leading cause, of battery failure. Another curtailment of battery life is the loss of active material from this positive plate. Also there's the possibility of short circuits within the battery caused by a precipitated accumulation of loose active material. With these three major deficiencies in mind, the Exide people set about to design an industrial storage type for railway, motive power and other heavy-duty service which would be free from these troubles. By the time they finished, there were three additional features as well. Silvium, a new alloy of silver, lead and other components, is now used in construction of the positive-plate gird since it's highly resistant to corrosion.

To combat the loss and accumulation of active material they manufactured a grid made up of metal core rods which are inserted in slotted hard rubber tubes (see photo). Active material is packed into these tubes to surround the rods and very fine slots in each tube permit entrance of the electrolyte but prevent any washing out of active material. In place of an alloy bar which ordinarily sealed the tube bottoms (and corroded eventually) they now use a single bar of non-corroding polyethylene which has a sealing plug for each tube. In addition this polyethylene is an insulating material and acts as a safeguard against shorting between plates. The Electric Storage Battery Co., Box 8109, Philadelphia 1, Pa.

Automatic sprinkler has chemical fusible element

Fundamentally, an automatic sprinkler is a valve designed to open and discharge water when a specified temperature is reached. Actually, some do not open at the exact temperature, but within a range of several degree above or below.

Now comes a new, extremely sensitive sprinkler that opens much closer to its rated temperature at a degree of precision heretofore deemed impossible to attain, according to the manufacturer. The new unit is the first approved sprinkler utilizing a solid chemical for its fusible element. Because this chemical is solid, different compounds can be produced, each with a definite unchanging fusing temperature, permitting manufacture of sprinklers with temperature ratings of 135, 160, 212, 280, 340 and 415 degrees F. It has been tested by both Underwriters Laboratories and Factory Mutual Laboratories.

In service, when surrounding atmosphere attains the temperature for which one of these sprinklers is rated, its fusible solid chemical element changes to a liquid, thus opening the closure and permitting water discharge.

Made of corrosion-resistant materials, its frame is of bronze composition and its releasing members of die-stamped Monel. The manufacturers have named it the "Globe Saveall Sprinkler" and it's available from Globe Automatic Sprinkler Company, Inc., 250 Park Avenue, New York 17, N. Y.

New changes made on recoil starter spring

Gasoline engine recoil springs with improved performance characteristics are being manufactured by Sandsteel Spring Division now, and are available in sizes from ⅜" x .025" to .042" x 6" and up to 12' in length.

Similar models are also available in a variety of sizes and styles to meet

(Continued on p. 102)

Dig Cleaner Trenches ..FASTER

BE-GE Hydraspeed TRENCHER

On trenching jobs up to 24 inches wide and 5 feet deep, Be-Ge digs them faster . . . and leaves a cleaner trench. The operator instantly regulates the digging depth and speed hydraulically by means of controls at his fingertips. The Hydratrans, exclusive with Be-Ge, is a positive displacement fluid motor that drives the rear tractor wheels at digging speeds of from 0 to 12 feet per minute. Mobile and maneuverable, Be-Ge trenchers can work in close to curbs and buildings. Ask for a demonstration.

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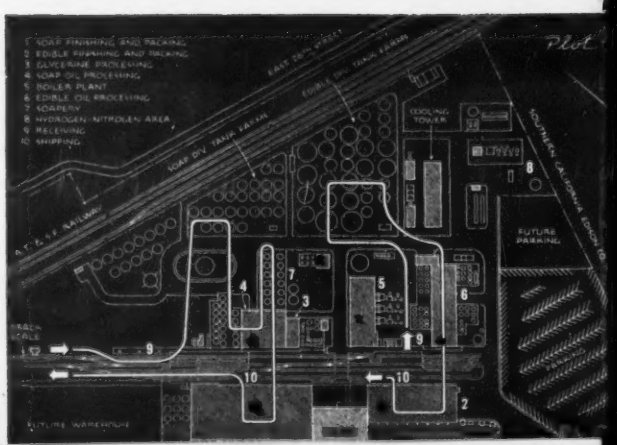
Manufacturers of Hydraulically Operated

Speedhaul Scrapers • Power Control Units

Scraper Planes • Land Levelers

Office building of the new Lever Brothers plant, Los Angeles, California, reflects the trend of today's industrial design.

★ Six Westinghouse Power Centers, spotted in black, are the heart of the plant's electrical distribution system which provides reliable service under all conditions.



PLANNED POWER PAYS

They matched modern plant design with modern power distribution

This 25-million-dollar Lever Brothers plant incorporates the most modern advances in design, layout and construction methods. And its system for distributing electrical power is as modern as the plant—assuring uninterrupted service under all conditions.

The secondary network system was specified in the early planning days by Bechtel Corporation—the engineers and constructors—with Westinghouse assistance. It contains six interconnected power centers that maintain service even though an electrical disturbance may fault a primary line. Secondary faults are isolated quickly. The ultimate in reliable power is assured.

Early planning has also taken full advantage of the flexibility of factory-assembled Westinghouse Power Centers. These compact, standardized units save valuable space . . . minimize layout problems. Their dry-type transformers permit them to be located safely anywhere in the plant. Additional units can be added easily, as loads and capacity increase.

CONSIDER THIS: A plant's distribution system is a vital design consideration. It must be planned at the blueprint stage . . . treated as an integral part of the building or expansion program. Today, the power needs of a modern plant require this kind of planning—coupled with completely co-ordinated equipment.

Westinghouse offers you assistance on *both* of these requirements . . . and backs them with years of experience, gained throughout all industry. You benefit by getting more freedom in design techniques . . . by providing your customer with the best system economically possible for *his* plant.

There is one best system of distributing electrical power for *every* plant. Let Westinghouse help you select it on your next job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94935

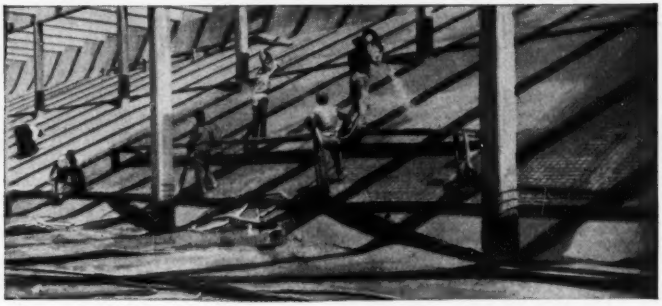
Space problems were minimized with six of these compact Westinghouse ASL Dry-Type Network Power Centers. They are standardized, factory-assembled units . . . can be expanded easily as power needs grow.

YOU CAN BE SURE . . . IF IT'S

Westinghouse

SYSTEM PLANNING

"GUNITE" Lining Restores Reservoir



When the old, open Ballou Park Reservoir at Danville, Va., was improved and covered in 1948, excessive leakage of the old brick lining was stopped with reinforced "GUNITE". The photo shows details of the process. After concrete columns to support the roof were placed, wire mesh reinforcing was laid and the entire reservoir was "GUNITED". Note that the reinforcing and "GUNITE" were carried over the column footings and up the columns approximately three feet to prevent leaking at those points.

The use of "GUNITE" for repair and construction of reservoirs, bridges, buildings, etc., is illustrated and described in Bulletin A2400. We will gladly send a copy at your request. On your letterhead, please.

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WOOD RESISTS FIRE

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Pressure-Impregnated
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Send for Booklet G28 which tells how structures can be built with wood for protection against fire hazards—to offer greater safety to contents and people.

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Wood Preserving Division
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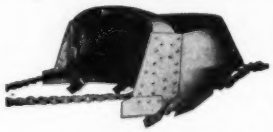
CRESCENT ★ SCRAPER



CRESCENT Scraper buckets are built in five types and fifteen sizes. Pictured above is a 1 cu. yd. size daigned for heavy excavating.

Step up the yardage you move and cut your costs at the same time by using a Sauerman Crescent Scraper on jobs where material has to be dug and hauled distances of 100, 200, 300, to 1,000 ft. or more.

The unique Crescent bottomless scraper digs effectively in any kind of loose material, handles heaping loads faster and requires less power per cubic yard handled than other types of scrapers.

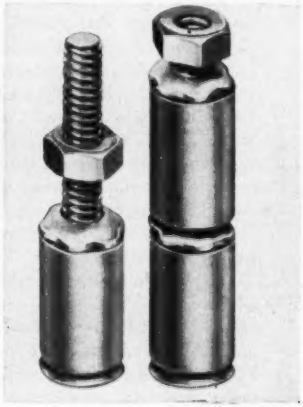
Write for Catalogs A and J — two booklets that give specifications of these scrapers and show them at work.

Sauerman Bros. Inc.
532 S. Clinton St. Chicago 7, Ill.

NEW PRODUCTS

the requirements of other power spring applications, such as in portable power saws, power lawn motors and other small machinery.

By using special high-carbon steel and annealing procedures, Sandsteel engineers have been able to design a longer, thinner spring which does not require a larger size holder, and will provide more pre-wind and reserve power to insure positive, easy starts. Even after long, severe use, the new starter spring is said to retain its original resiliency and energy storage qualities, will not set or fail to return, and continues to provide adequate tension on the handle. SANDSTEEL SPRING DIVISION, SANDVIK STEEL, INC., 145 HUDSON STREET, NEW YORK 13, N. Y.



Anchor bolts available in single or double type

Said to guarantee 50 per cent more anchorage, these Super-Grip anchor bolts come in single and double assemblies. After the bolt is inserted with a lead sleeve and cup-shaped steel anchor, a tamping tool mushrooms the lead first. Repeated blows then flatten out the steel anchor, driving its ribbed steel edges into the walls of the hole. Steel reinforces the lead and insures a permanent, solid anchorage.

An additional feature is that the bolt can be inserted in masonry, wood, concrete etc. at any angle and the bolt can then be bent or offset without disturbing the anchorage. Singles are designed for general anchorages, doubles for extra-duty work. Bolt sizes are from $\frac{3}{8}$ to $\frac{1}{2}$ in. and up to 5 in. long. SUPER-GRIP ANCHOR BOLT CO., INC., 3333 N. 22ND STREET, PHILADELPHIA 40, PENNA.

NEW PRODUCTS

Electric truck sports 80-cu-ft end-dump hopper

Bulky loads of loose material such as sand, gravel, sawdust, ashes and scrap can be toted easily in this 4,000-lb capacity end-dump hopper designed by Yale & Towne for their 4,000-lb electric high-lift trucks. A specially shortened platform accommodates the 80-cu-ft hopper and the regular platform elevating mechanism does the dumping. THE YALE & TOWNE MANUFACTURING CO., PHILADELPHIA DIVISION, PHILADELPHIA 15, PENNA.

New product briefs . . .

Lull Manufacturing Co., 314 W. 90th St., Minneapolis 20, Minnesota has a new **Model 3-B Shoveloader** built for use on the Minneapolis-Moline RTI tractor. The new 3-B permits installation of the M-M SMRI mower attachment wihout interfering with the operation of the Shoveloader. Either may be operated without removal of the other.

A new line of **Fiberglas safety helmets and caps** is announced by **Industrial Products Co., 2751 N. Fourth Street, Philadelphia 33, Penna.** Designed for use in mines and mills as well as on construction sites, they can be had with any accessories, such as chin straps, lamp brackets and winter linings. The helmet weighs only 12 oz; the cap, 10 oz. They adjust to any head size from 6¼ to 8.

Development of a **new type of fluorescent lamp** was announced by **General Electric Co., Nela Park, Cleveland 12, Ohio.** Named "Rapid Start," the new lamps are to be used with especially designed ballasts, and are intended only for new lighting systems. They are being made in the popular 40-watt size and in the standard "cool white" color.

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EDITORIALS

Marking time on toll roads

ORGANIZATIONS with many bosses such as the American Association of State Highway Officials are bound to move slowly, especially on important decisions as to association policy. That fact needs to be taken into consideration when evaluating the recent announcement of the AASHO executive committee that the association will not sponsor any proposed changes in national policy toward toll roads at the present time. The AASHO has to coordinate the thinking of 53 independent state and territorial highway departments and the Bureau of Public Roads. Consequently, conservatism and a cautious approach to a hot subject like toll roads is inevitable.

Nevertheless, this need for the AASHO to move slowly in order not to lose support from a majority of the member departments should not be allowed to obscure the fact that the states and the nation are badly in need of guidance as to what their policies toward toll roads should be.

The AASHO executive committee holds that recommendations for changes in national policy toward toll roads should not be submitted to AASHO members for approval at this time because of the fluidity of the toll-road problem. In general, the best time to seek to change anything is when it is in a state of flux. Hence, the present time appears to be a most appropriate time for the AASHO to concentrate all its energies on developing the best possible toll-road policies, for the national government and the states.

That the AASHO has an important stake in providing the states with sound advice on this subject at the earliest possible date will become evident when one realizes that control over most of the mileage of toll roads built to date already has passed from the state highway departments to turnpike authorities that are partly or entirely independent of those departments. By the time the Ohio Turnpike is completed about two years hence, control over the principal trunk highway from New York to the Indiana line will be outside of the jurisdiction of the highway departments of the states through which the highway will run. It also will be beyond control of the Bureau of Public Roads.

If this trend is not checked, many state highway departments may some day find that jurisdiction over much of what then will be the basic highway network is in hands other than their own.

The AASHO executive committee made its announcement at the time it made public the report of a special committee on toll roads (ENR Aug. 7, p. 28).

The special committee did not recommend any changes in federal or state policies toward toll highways. What it did propose was a liberalization of federal policy toward free roads, which the committee believes would serve to decrease the demand for toll financing. It also recommended against continuation of the present federal policy of permitting federal-aid highway funds for use in constructing toll bridges.

Concerning policies, the special committee said: "While the committee is unanimous in the opinion that resort to toll financing and borrowing by the issuance of revenue bonds, unsupported by the faith and credit of the state, are expedients to be avoided whenever possible, it recommends that the association refrain from taking a position either for or against toll roads and any particular method of debt liquidation. These are matters of public policy, decision upon which, the committee believes, must rest with the authorities and the people of the states concerned.

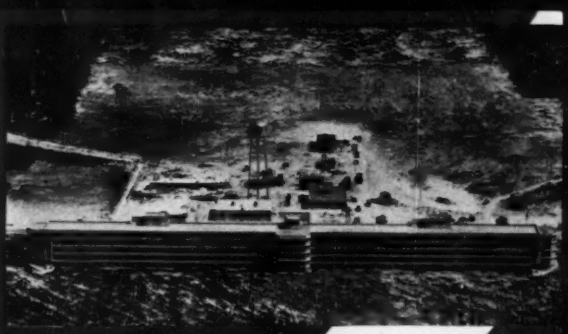
We agree that these are matters of public policy that must rest with the people of the states, but the people need guidance in setting sound policies. The American Association of State Highway Officials is best equipped to outline such policies for them. It will not have lived up to its responsibilities if it accepts this report as final. The report should be looked on only as the starting point for an active discussion having as its objective an outline of what should be the best policies for the states and federal government to adopt toward toll roads.

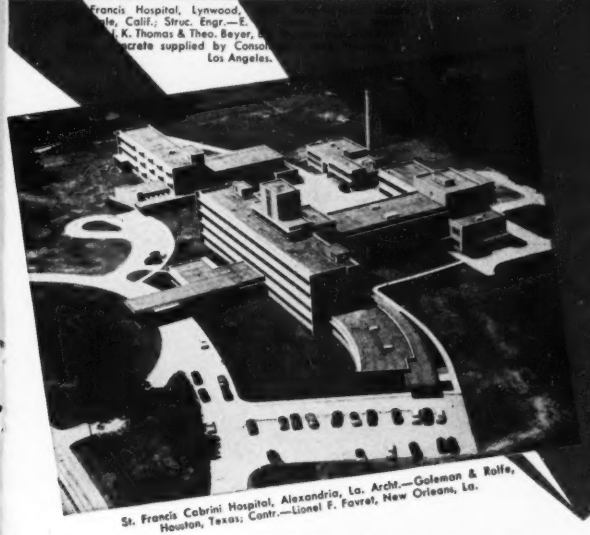
Handbook engineering

IN OUR MAIL the other morning was a letter asking for "titles, publishers and prices of any practical publications covering the design of earth and concrete dams. Handbooks showing actual standards with schematic sketches of structures suitable for impounding flood water in reservoirs are particularly desirable. Books based on theory and abstractions are not wanted."

We turned to our shelves, which are well filled with books on the design of dams going back to Wegmann's monumental work. What should we recommend? An imposing array bearing the imprint of publishers who take pride in their skill in meeting the public's book needs and written by such authorities as Creager, Davis, Hanna, Houk, Justin, Kennedy, Knappen, Mead and Steele. But no one of them met that baldy stated specification—"Books based on theory and abstractions are not wanted." Finally we concluded that Wegmann's book with all its big plates showing typical sections of most of the large dams built up to the time of publication came nearest to filling the bill. Those plates could be characterized as "schematic sketches" uncluttered with evidence of the fact that the designs shown actually had been based on sound engineering theory.

But alas! When we came to check with the publisher, we found the book was out of print. So we were forced to reply that we were unable to recommend any book meeting so simple a specification—engineering being what it is.





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